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ABSTRACT

This booklet is intended to assist those planning nature centers to choose building designs appropriate for intended purposes. The publication presents a set of general interpretive building-site and design considerations compiled over years of experience in nature center design. These generalizations are complemented by examples of floor plans, photographs, and renditions from 20 interpretive buildings as well as a critical narrative review of each facility by the people who use it. (Author/RE)

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Guidelines For Interpretive Building Design

Edited by Richard J. Manly

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Foreword

To build, or not to build—that often is the question.

For those who are creating a nature center, finding the right answer can involve issues that go far beyond the obvious one of money: Does the outdoor education program planned for the site need a building? Can the site accommodate a facility without undue environmental damage? Would one location be better than another? Does the community need a facility for purposes related to environmental education?

This book is aimed primarily at helping those who have answered these kinds of questions in the affirmative. It may also provide some needed insights for others who are trying to evaluate situations where the answer is not yet clear. The guidelines are sound and are based on a wide range of experience in nature center development. They can be an invaluable aid to all those who are engaged in the exciting business of expanding environmental awareness and knowledge through community nature centers.

Gene W. Setzer
Vice-President
National Audubon Society
New York, N. Y., 1977

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Preface

The nature center movement is in its fifth decade of development and is approaching a relatively high degree of sophistication. The latest National Audubon Society, Nature Center Planning Division, surveys indicate that there are more than 800 nature centers and related environmental education facilities in the United States and Canada. They range from small, relatively inexpensive operations to those with substantial investments in land, buildings, equipment, personnel, and programs.*

Aside from the land, the interpretive building at any nature center generally requires the largest capital investment; therefore, careful planning and design are critical prerequisites for this important feature.

This publication presents a set of general interpretive building-site and design considerations which have been compiled over the years by the Nature Center Planning Division. These generalizations are complemented by examples of floor plans, photographs, and renditions from twenty different interpretive buildings, as well as a critical narrative review of each facility by the people who are actually using it.

We are hopeful that these data will act as an important source of planning and design ideas for architects, planners, and nature center personnel.

It is also important at this point to acknowledge the valuable contributions made by the director and staff of each center featured in this publication.

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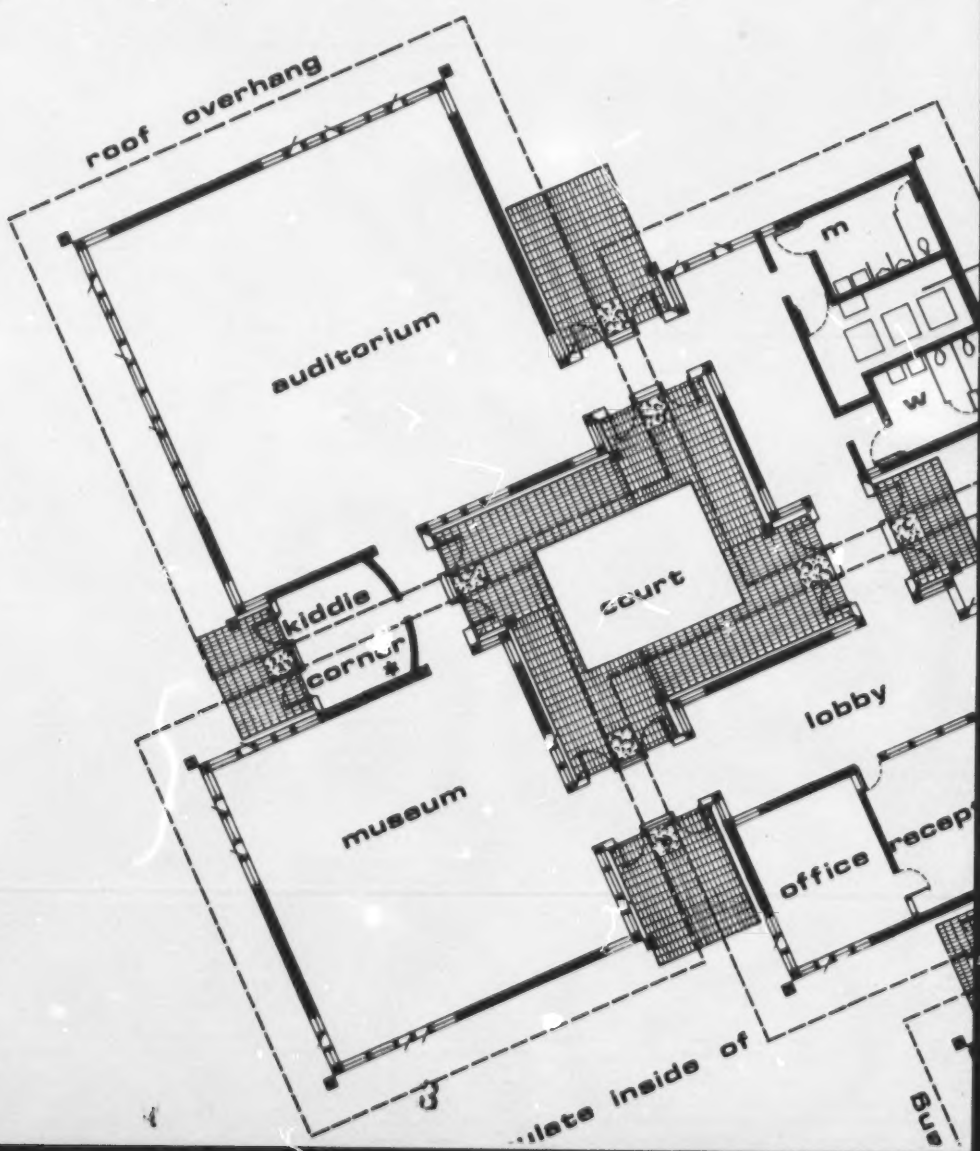
*"*Directory of Nature Centers and Related Environmental Education Facilities,*" *published by the Nature Center Planning Division.*



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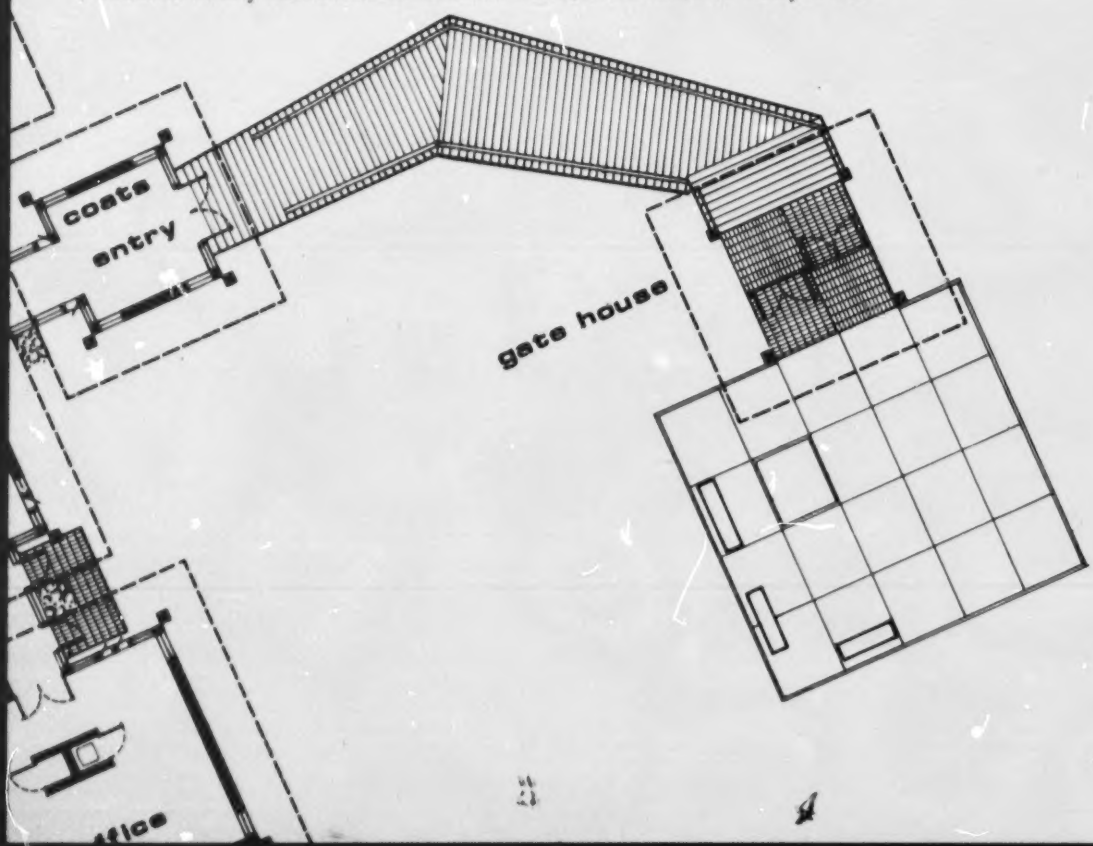


Overview—
What Is a Nature Center?

Introduction

A nature center is a vital link between man and his natural heritage. It is a naturalistic landscape readily accessible to the public, where facilities and programs offered by a competent staff are planned to instill in man a curiosity and respect for the natural world.

The nature center concept is rather young, tracing its origins back to the 1920s when Benjamin Talbot Babbitt Hyde began experimenting with outdoor education programs at Bear Mountain State Park, thirty miles north of New York City. It was during the past decade that the nature center movement, as we know it today, found its greatest public acceptance.

In the course of the movement's development, basic ideas were adopted from such recognized professionals as museum and zoo curators, natural resource managers, formal educators, recreation planners, and naturalists, then gradually modified to form today's concept of a nature center.

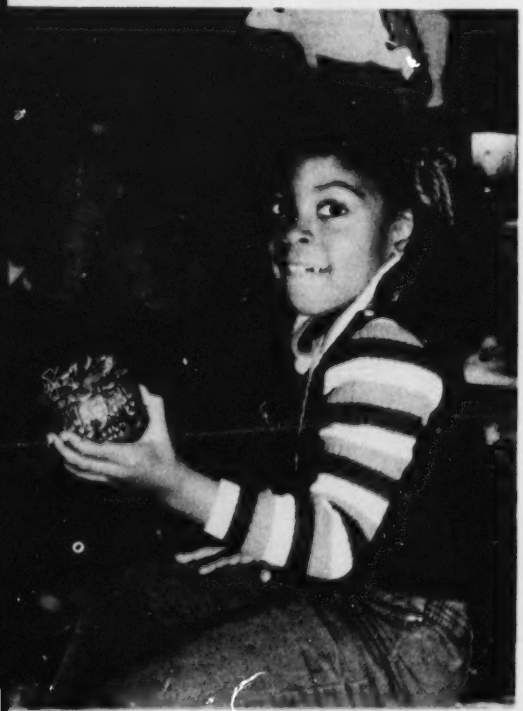
The modern nature center:

- May exhibit a representative sample of such indigenous cold-blooded animals as snakes, turtles, fish, or amphibians but generally avoids warm-blooded animals because of the care they require and the excessive expense of maintaining them properly. Most centers stress the importance of observing wild creatures in their native habitats.
- Avoids large and expensive dioramas normally found in the traditional museum and favors simple, inexpensive, readily changeable displays which invite visitors to see, handle, smell, or listen—displays they can become directly involved with.
- Has areas inside its interpretive building designated as classrooms. Compared with an ordinary school classroom, they are quite informal in design and use. Basically, they are intended to orient visitors—the philosophy at most centers being that the outdoors is the primary classroom.
- Is designed for a wide variety of recreational activities such as hiking, bird watching, and photography. But these activities are mainly passive ones and are not stressed or adequately budgeted for, although the situation may be otherwise in some public parks.
- Combines the policy elements of both park and resource management agencies. Many centers are zoned so that a percentage of the land base is left natural while other sections are designated for habitat manipulation—controlled burning, mowing, tree planting, and harvesting. Each area serves to demonstrate the responses of nature when left alone or "managed" by man.
- Is staffed by professional naturalists and highly qualified amateurs whose job it is to develop, present, and administer the various programs offered at the center.
- Extends its services to a broad cross-section of the community by scheduling activities away from the nature center proper. These may include regular radio and TV appearances, articles in newspapers, seminars for middle management business executives, workshops for teachers and natural resource managers, guest lectures, or testifying on local or regional environmental issues. The influence of the modern nature center extends beyond the nature center itself.

The Components

The Nature Center Planning Division of the National Audubon Society believes that a nature center must have four basic components to function effectively:

- *An adequate natural resource base* representing a broad diversity of natural habitats. This may require as little as twenty acres or as many as hundreds of acres.
- *Physical facilities*, including roads, trails, indoor and outdoor displays, a maintenance building, equipment, and an interpretive building.
- *Programs*, which should be varied, inspirational, instructional, and recreational in scope.
- *And people*, including a staff of professional and volunteer teacher-naturalists, administrative and maintenance personnel, and the visiting public.



Pre-planning Activities, Data Collection, and Analysis

A key element in any planning project is the process by which rational decisions can be made. In planning a nature center, the initial steps should involve collection and analysis of natural resource data and synthesizing these data with the relevant social factors. A detailed resource inventory and analysis will serve as a baseline for observing change and can be used to determine systematically which areas of the center are best suited for various uses.

Baseline Inventories

The data collection process should include, if possible, information on climatic conditions, geology, floodplains, soils, topography, drainage patterns, delineation of plant and animal communities, and a listing of plants and animals by species. Other factors such as accessibility, demographic information on surrounding communities, airway and highway traffic patterns, undesirable peripheral development, local restrictive ordinances, and availability of utilities also are important when selecting sites for the trails, access road, parking lot, and interpretive building. Simply stated, there is quite a bit of work involved in the pre-planning phase alone.

Ideally, the center director should be hired well in advance of any serious attempt to develop an overall concept for the nature center or architectural plans for the interpretive building. Then the director will be able to initiate, coordinate, and complete most of the critical natural resource inventories and become acquainted with the community before the planners and architects become involved.

Overall Concept Planning*

Analysis of the data collected will directly influence the development of the overall nature center concept plan. The plan should contain the following:

- A zoning policy to delineate appropriate uses of the resource base. Under normal situations, three broad zoning categories are used for planning nature centers:
  - . . . *Intensive use.* This category includes the interpretive building, nearby trails, parking areas, and the interpretive building's immediate surroundings.
  - . . . *Resource management.* This category includes the location of educational demonstration areas and other interpretive support facilities. Habitat manipulation (mowing, burning) is permissible.
  - . . . *Natural areas.* This category includes places where there is to be a minimum of human encroachment to preserve fragile landscapes, or rare or endangered species of flora or fauna.
- Compatible and noncompatible activities at the nature center.
- Alternatives for the site location of the interpretive building.
- The location of other primary support facilities—roads, trails, maintenance garage, staff housing.

Once the concept plan for the entire nature center has been completed and approved, the next step in the process concerns the design of the interpretive building and its immediate surroundings. This phase should be controlled by a competent architectural firm, but it requires significant input from the nature center director, the staff, and/or qualified outside advisors. Toward this end, the Nature Center Planning Division of the National Audubon Society will review preliminary architectural interpretive building plans for a nominal fee.

**For a more detailed account of this planning phase, refer to the Nature Center Planning Division's publication, "Planning a Nature Center."*

The Interpretive Building

The interpretive building functions as the focal point for administrative and program activities at the nature center. A stop here will help to orient visitors and make them aware of what the center has to offer.

The design of the interpretive building should be influenced by the programs envisaged for the nature center as well as by the physical and biological characteristics of the site.

The following are general guidelines for the siting and design of the interpretive building.

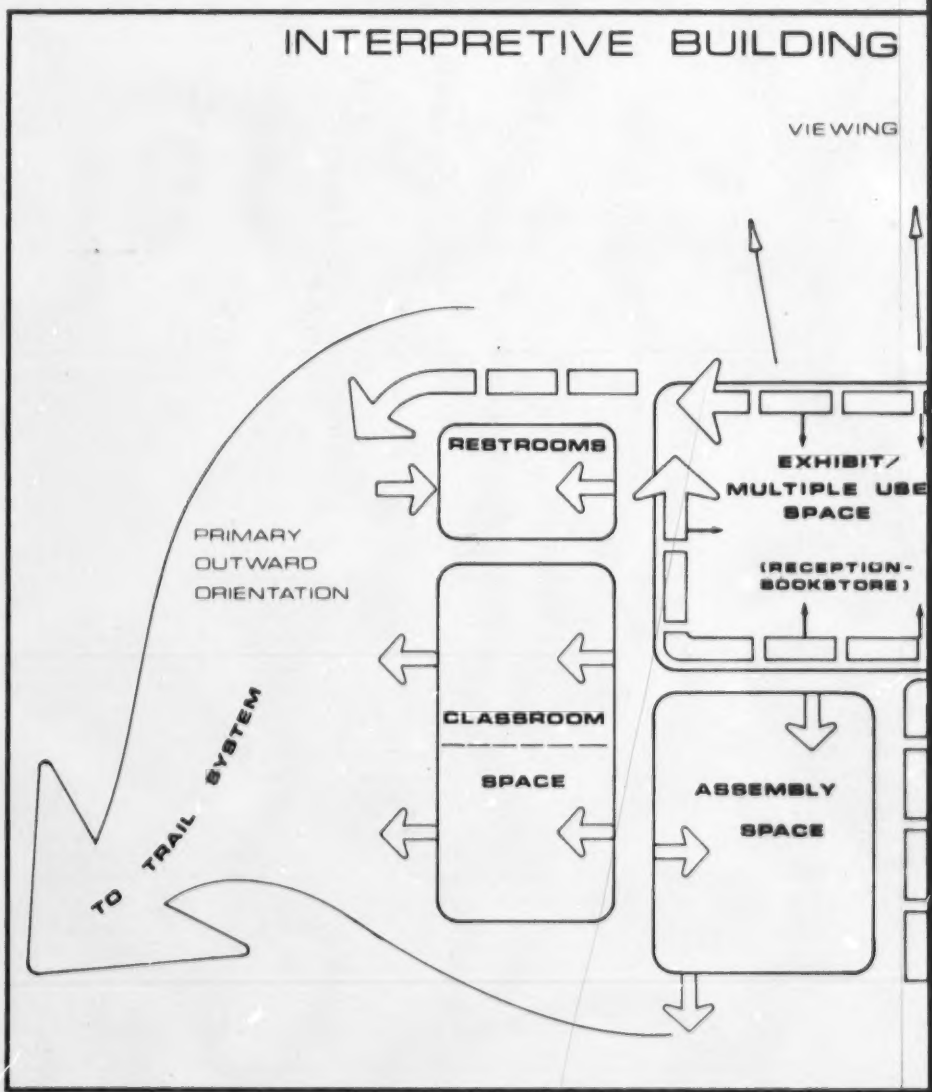
Building Site Locations

Certain basic criteria must be considered when determining the location of the interpretive building. These include:

- soils drainage and slope conditions favorable for construction
- access to the significant interpretive features at the nature center
- an esthetic setting
- avoiding biologically significant areas
- avoiding localized climatic extremes, such as frost pockets and exposure to high winds and drifting snow
- ample space to expand the building should expansion become necessary
- security from vandalism, fire, flooding, geologic faulting, and soil subsidence
- accessibility to existing roads and utilities.

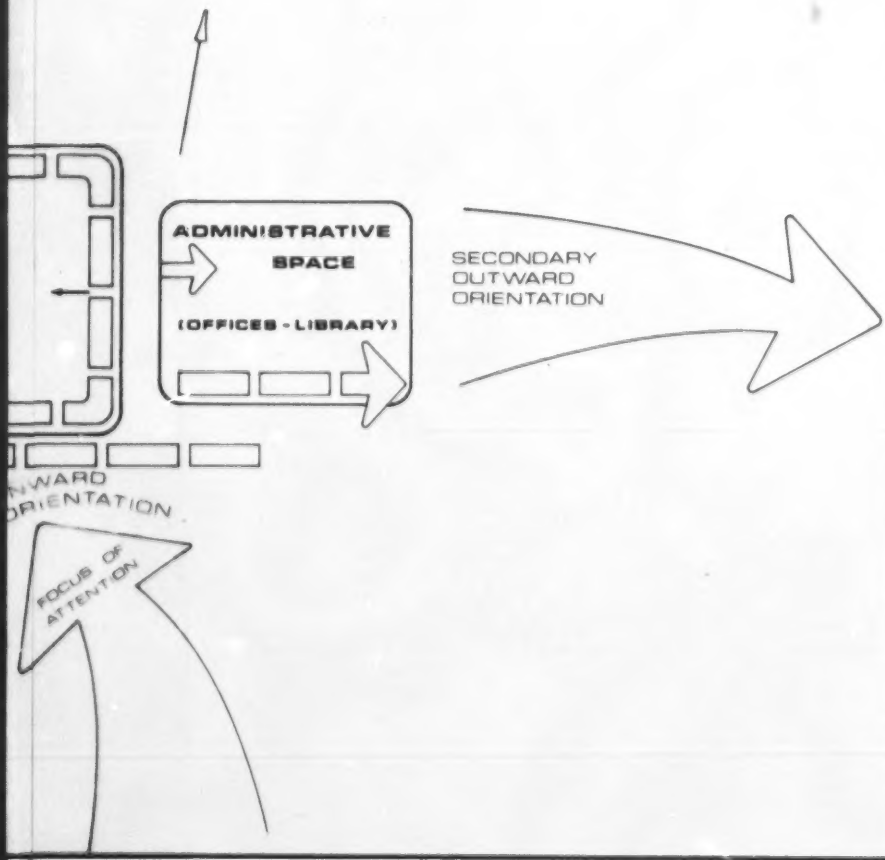
Overall Building Design Considerations

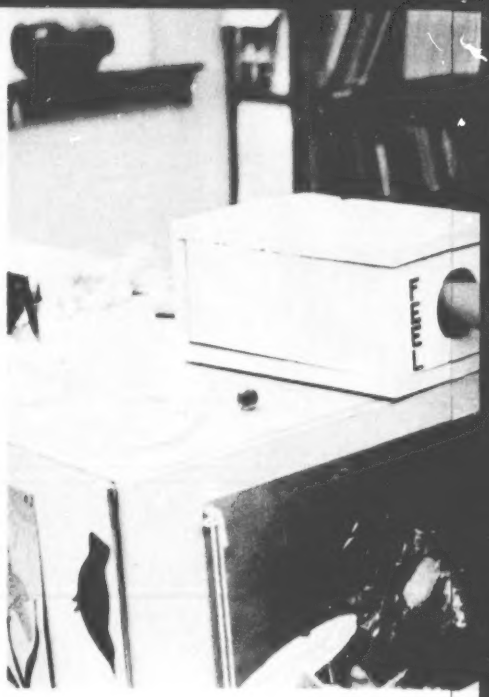
- Top priority should be given to designing a functional and efficient structure. Some caution should be exercised so the interpretive building will not turn out to be an impractical architectural oddity.
- Entrances, exits, and interior spaces should be correlated with an overall traffic flow or circulation plan. Whenever possible, unsupervised groups or individuals should move through the building and over the grounds in a one-way pattern.
- The design should permit simultaneous use of the building by several groups.
- Low-profile buildings generally are less obtrusive visually than buildings with a high profile.



DESIGN CONCEPT

AREA





- The exterior of the building should be faced with wood or stone that will blend with the natural surroundings.
- Energy costs are mounting each year, and all efforts to minimize this expense should be incorporated in the design. The interpretive building should be a model facility for illustrating the conservation of energy. The following features should be considered:
  - . . . siting the building where it will be protected from environmental extremes—high winds, frost pockets, full sun
  - . . . thermal windows
  - . . . efficient insulation
  - . . . natural draft ventilation to minimize or eliminate the need for air conditioning
  - . . . maximizing the use of natural lighting
  - . . . the development of alternative energy sources at the center by using solar, water, or wind power.

Interior Building Design Considerations

- The exhibit area in the interpretive building will be a central attraction for most of the visiting public. It should:
  - . . . Have a flexible and efficient traffic flow pattern to provide easy access from the main building entrance, through the exhibits, and on to other key segments of the building or outside to the trail system.
  - . . . Be provided with ample usable wall and floor space for exhibits and displays.
  - . . . Be well lighted and ventilated.
  - . . . Have a roomy and uncluttered appearance.
- Permanent staff members should have individual offices or work areas which afford them a reasonable degree of privacy. Additionally, many interpretive buildings have space allocated specifically for use by the volunteer staff.
- Centers that anticipate a large school attendance need several classrooms in the interpretive building. These rooms will provide space for orienting classes that arrive simultaneously before they move outdoors, and indoor activities can be held in them in case of inclement weather.
- If the nature center program will include activities for large audiences, an auditorium equipped with the necessities for lectures or audio-visual presentations will be required.
- Inadequate restroom facilities can cause undue program delays and foreshorten scheduled group activities. Therefore restrooms should be designed to accommodate peak visitor traffic to prevent such occurrences.
- Access to the restrooms from outside the interpretive building should be provided for individuals or groups visiting the nature center after normal closing hours, when interior access will be impossible.
- A reference library and reading room can be a great asset to the center's

education program and, under certain situations, can serve as an auxiliary meeting room.

- An important source of income for a nature center is a bookstore and specialty shop where visitors have the opportunity to purchase natural history books, field guides, checklists, bird feeders, and other items consistent with and useful to the outdoor education program. This feature should be located where it is readily accessible to visitors, yet it should not conflict with the internal traffic flow or be an audible distraction to anyone elsewhere in the building.
- Some nature centers have wisely incorporated space for a "mud" or "wet" room in the basement of the interpretive building. There are a number of obvious advantages to this arrangement:
  - . . . It provides a specific place for participants to clean up after a messy outdoor program.
  - . . . It helps minimize janitorial problems.
  - . . . It provides an additional storage area for program equipment, such as dip nets, snowshoes, and hip boots.
- Work space for designing and building exhibits and displays is an absolute necessity. Because of noises, noxious smells, dust, and hazards from flammable materials, it is recommended that these activities be carried out in a separate maintenance building. If this

is impossible, the work area should be located in a section of the interpretive building where it will not distract from the programs in progress or pose a safety or fire hazard.

- Lack of adequate storage space seems to be a universal complaint about most interpretive buildings. Therefore, provision for plenty of storage space should be a prime concern in all planning and design phases.
- Some individuals think a photographic darkroom is an unnecessary frill in the interpretive building. Many nature centers, however, have built very exciting and successful nature photography programs around their darkrooms.
- If the interpretive building is going to successfully service a broad cross-section of the community, it will have to be designed with the special requirements of small children, the aged, and the handicapped in mind. For example, ramps should be constructed in conjunction with or in lieu of stairways; special water fountains, sinks, and toilet fixtures should be installed; and exhibits should be built so they can be seen (touched, heard, and smelled, in some cases) by all visitors.
- Large windows can create a feeling of openness and intimacy with the outdoors. On the other hand, excessive and/or large windows:
  - . . . Limit opportunities for wall displays.
  - . . . Make darkening rooms for audio-visual programs difficult.
  - . . . Raise the cost of heating and cooling if they are not thermally insulated.
  - . . . Create a hazard to migrating birds, which have a tendency to crash into them and often are killed by the impact. (Attaching hawk silhouettes to individual window panes or hanging them loosely under the eaves of the roof will lessen this problem.)
- Modern carpets can withstand very heavy use, add a dimension of decorative warmth and, most importantly, muffle sounds. Carpets should be given priority as a floor covering in the exhibit area, auditorium, classrooms, and library.
- Electrical outlets and lighting fixtures often are neglected in the design of the interpretive building, only to later become a troublesome problem, particularly in the exhibit and classroom areas. Nowadays, many structures are being equipped with movable light fixtures installed on tracks mounted on the ceiling. Continuous-track electrical outlets also are available today and are preferred to standard fixtures.

Twenty Interpretive Buildings—Specific Examples

This section contains an assemblage of data from twenty nature centers in the United States. (Included in the term "nature center" are many variations on the theme—environmental education centers, nature education centers, wildlife centers—whose activities and objectives are very similar in scope.) They represent a broad cross-section of design ideas, ranging from renovations of existing barns and houses to completely new facilities, and of sizes from 1,500 square feet to 18,000 square feet.

Each nature center has contributed information which is presented in three parts:

- Background information
  - . . . name of nature center
  - . . . address
  - . . . sponsoring agency
  - . . . acreage of nature center
  - . . . number of permanent, part-time, and volunteer staff
  - . . . annual visitation
  - . . . date when interpretive building was opened
  - . . . usable square footage in building
  - . . . construction costs
  - . . . architect
- A critical narrative review
- Graphics, including floor plans, renditions and/or photographs of exteriors and interiors.

The Nature Center Planning Division believes that a number of nature centers were not totally objective in their responses, despite the request for a *critical* narrative review. Nevertheless, their reviews are included here because of their overall informational value.

Babson Park Audubon Center

Background Information

Address: Route 1, Box B149E, Babson Park, Florida 33827

Sponsoring agency: Ridge Audubon Society

Acreage of nature center: 3

Number of staff: permanent: 2; part-time: 1; volunteer: 8

Annual visitation: 1,500 (open about 6 months of the year)

Date interpretive building opened: February 2, 1974

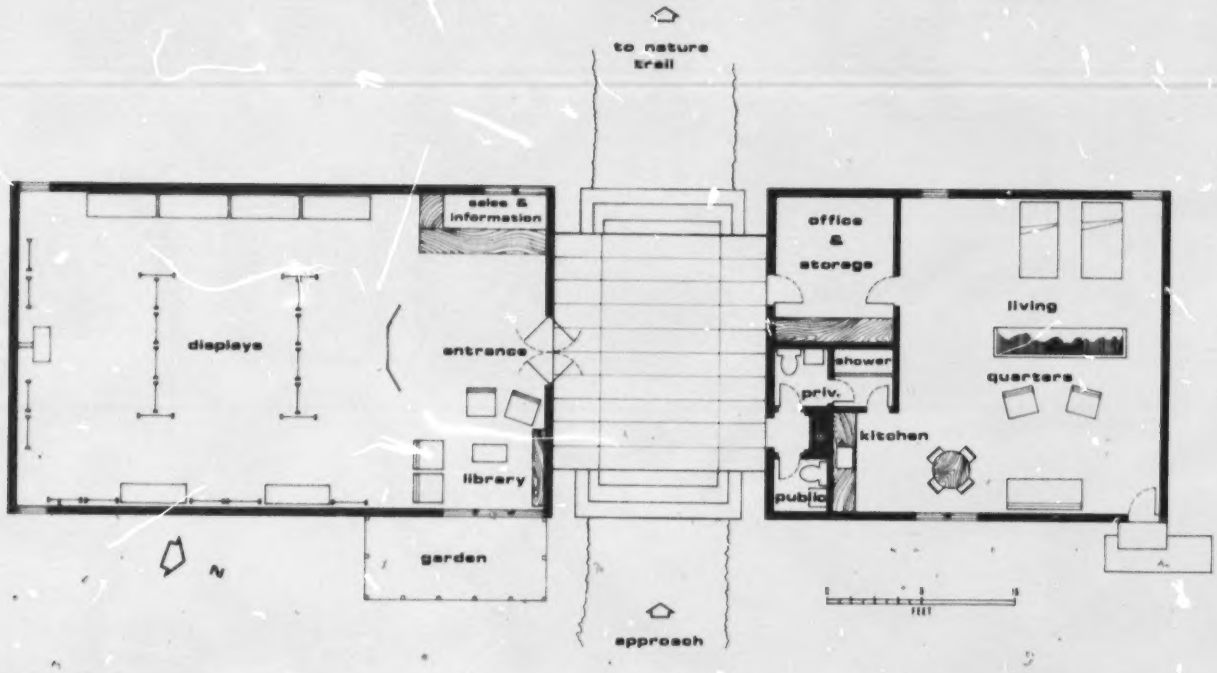
Usable square footage in building: 1,976

Construction cost: (unknown)

Architect: J. Clyde Parlier, 215 East Park Avenue, Lake Wales, Florida 33853

Narrative

The location of the interpretive building at Babson Park Audubon Center is excellent, and traffic flow within the facility is satisfactory, considering its size. The overall design of the building, however, leaves something to be desired. Although the building is quite attractive from the outside, the interior has many impractical features, such as jalousie windows which are drafty and allow insects, scorpions, and lizards easy access, no windows for ventilation in the restrooms, and inadequate storage space. High ceilings present a problem in heating and cooling the living quarters and in heating the exhibit room. (There is no air conditioning in this section of the building.)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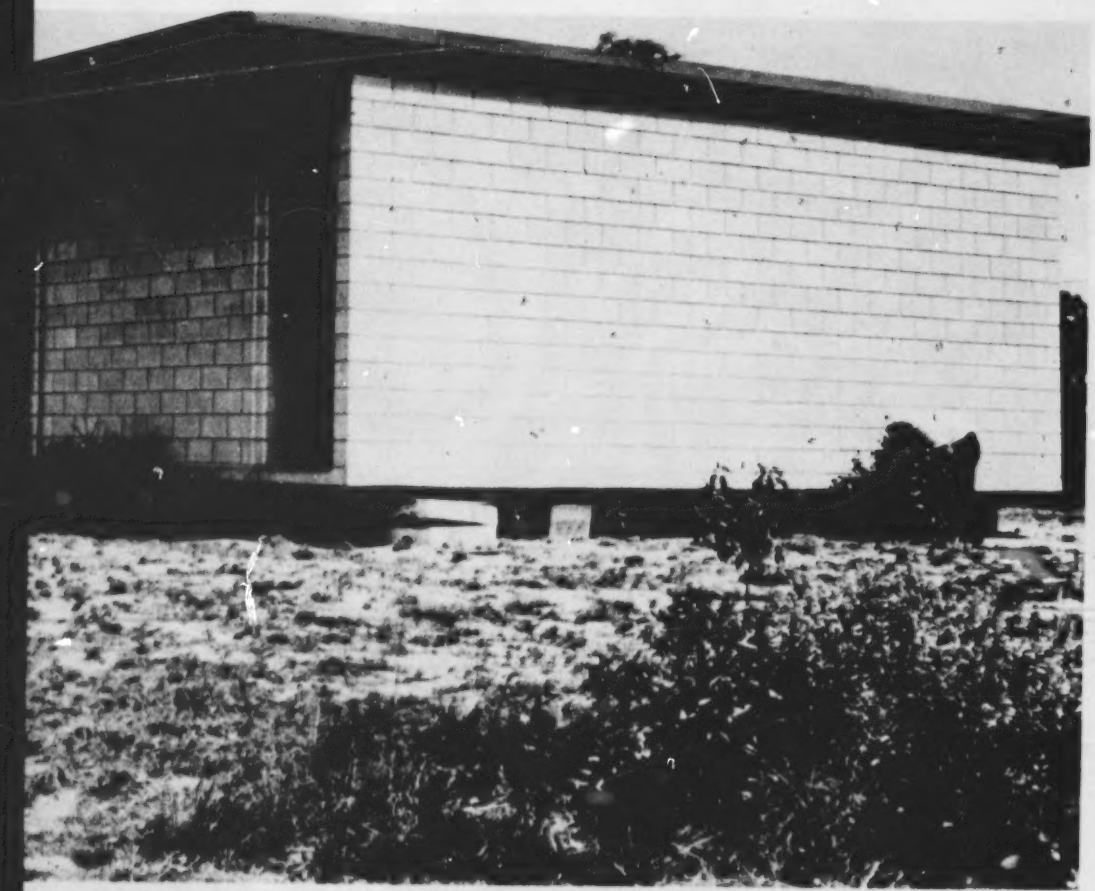


Nature Center in Hyland Lake Park Reserve

Background Information

Address: 8737 East Bush Lake Road, Bloomington, Minnesota 55431

Sponsoring agency: Hennepin County Park Reserve District

Acreage of nature center: 200 within 1,000-acre Hyland Lake Park Reserve

Number of staff: permanent: 4; part-time: 3; volunteer: varies

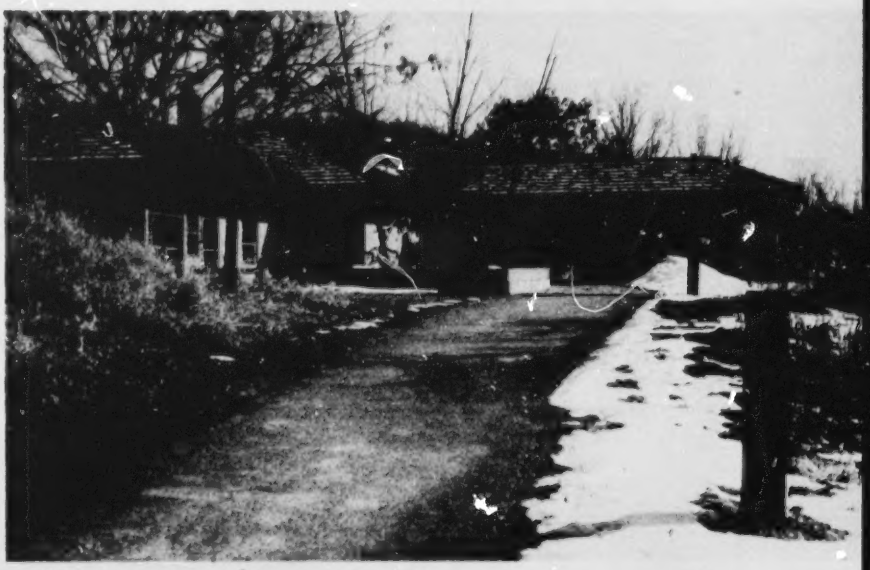
Annual visitation: 20,000

Date interpretive building opened: May 1971

Usable square footage in building: 1,500

Construction cost: $100,000

Architect: Douglas A. Baird, 1545 Hennepin Avenue, Minneapolis, Minnesota 55403



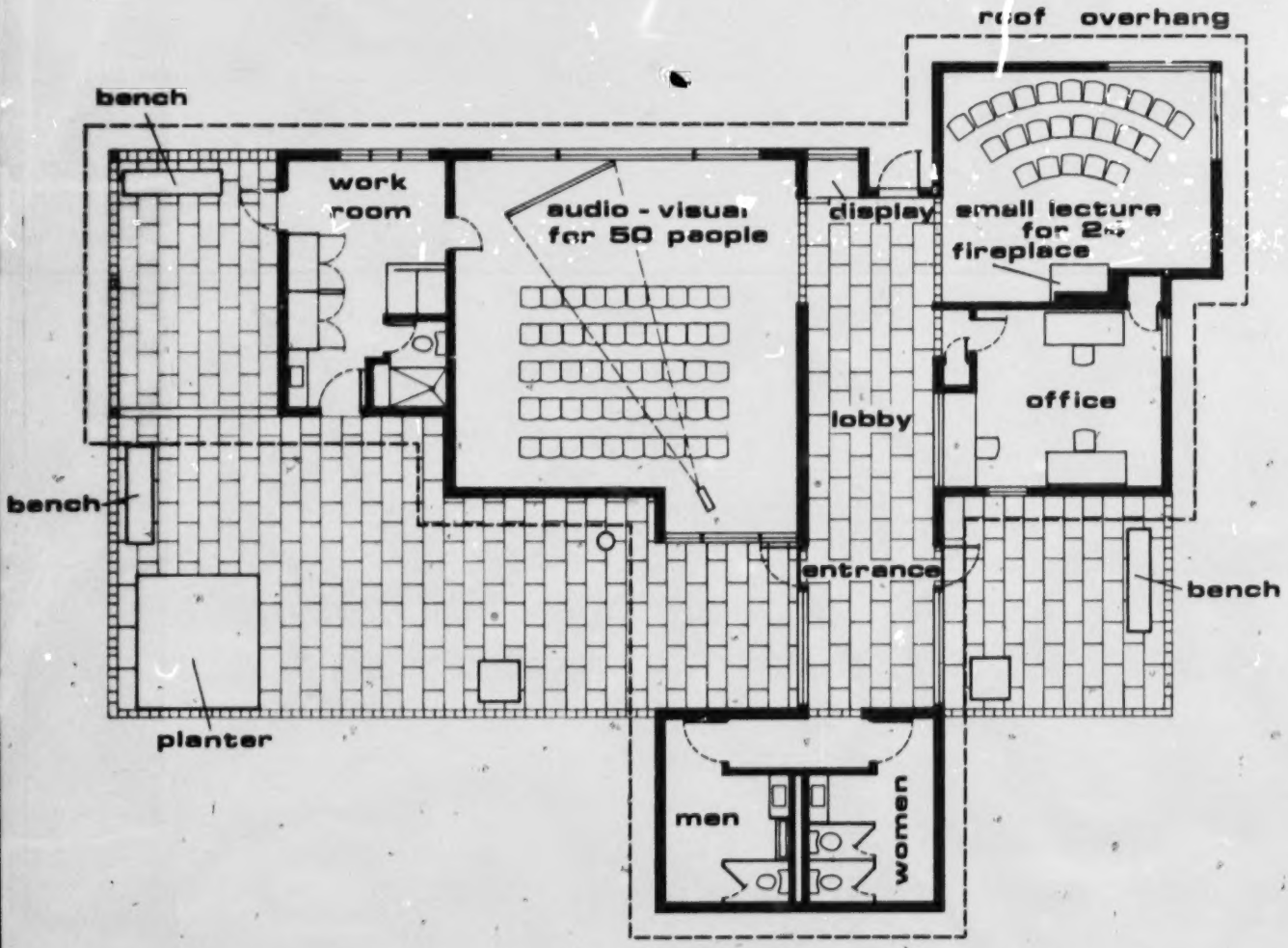
Narrative

The interpretive building at the Hyland Lake Park Reserve is a remodeled three-bedroom, concrete-block residence. The single-story structure (with no basement) has a pleasing, low-profile exterior and an interior floor plan which has proved satisfactory for the center's informal program. The internal traffic flow is not directed by the building's design, and for some programs this failing does present a few problems. However, the unrestricted freedom of movement afforded visitors is worth the minor inconveniences.

Space for heated storage and for administrative activities in the interpretive building is at a premium. Fortunately, it was possible to convert the upper level of an adjacent garage into additional offices. They are close enough to the interpretive building to be convenient for the staff, yet remote enough to permit undisturbed work. The problem of heated storage space has yet to be solved.

Many small children visit the center, and the overall size and design of the restrooms, including the number and height of fixtures and their ease of operation, are inadequate for them.

In summary, the nature center staff think that the interpretive building is attractive in appearance and functionally accommodates the existing *outdoor* education program. It is their considered opinion that an interpretive building defeats its primary purpose if it becomes an indoor-oriented, super-attraction in itself.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fireplace
office
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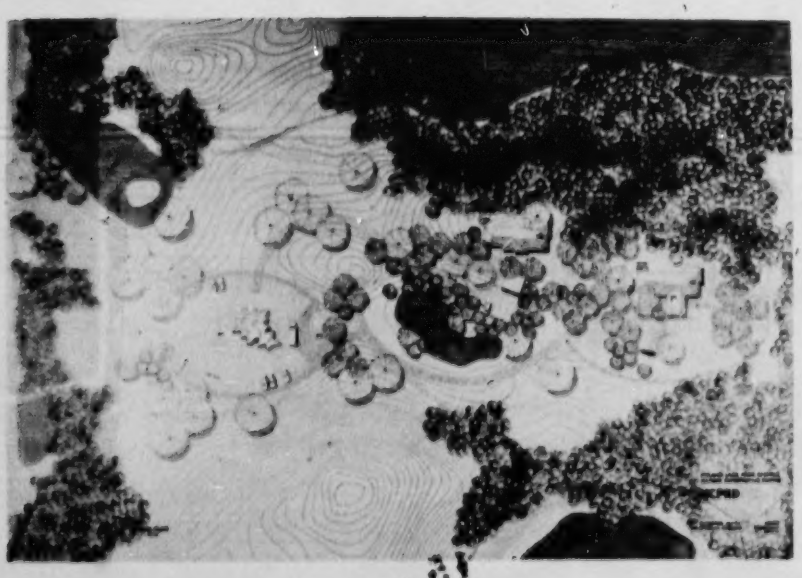
bench
planter
men
women



Fort Worth Nature Center and Refuge

Background Information

Address: Route 10, Box 53, Fort Worth, Texas 76135

Sponsoring agency: City of Fort Worth Parks and Recreation Department

Acreage of nature center: 3,400

Number of staff: permanent: 3; part-time: 1; volunteer: 45

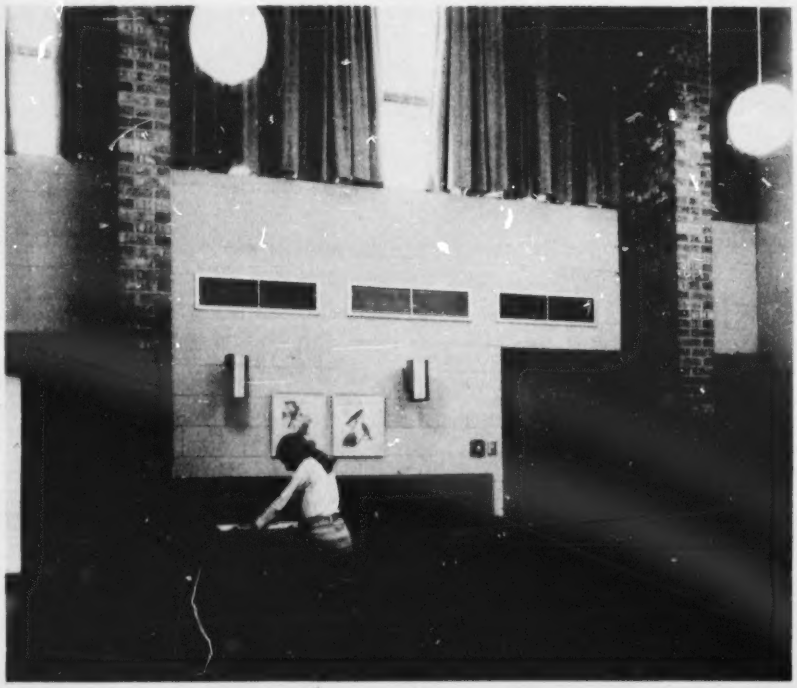
Annual visitation: 10,000

Date interpretive building opened: February 1971

Usable square footage in building: 2,300

Construction cost: $55,000

Architect: Albert S. Komatsu & Associates, 1612 Summit Avenue, Fort Worth, Texas 76102

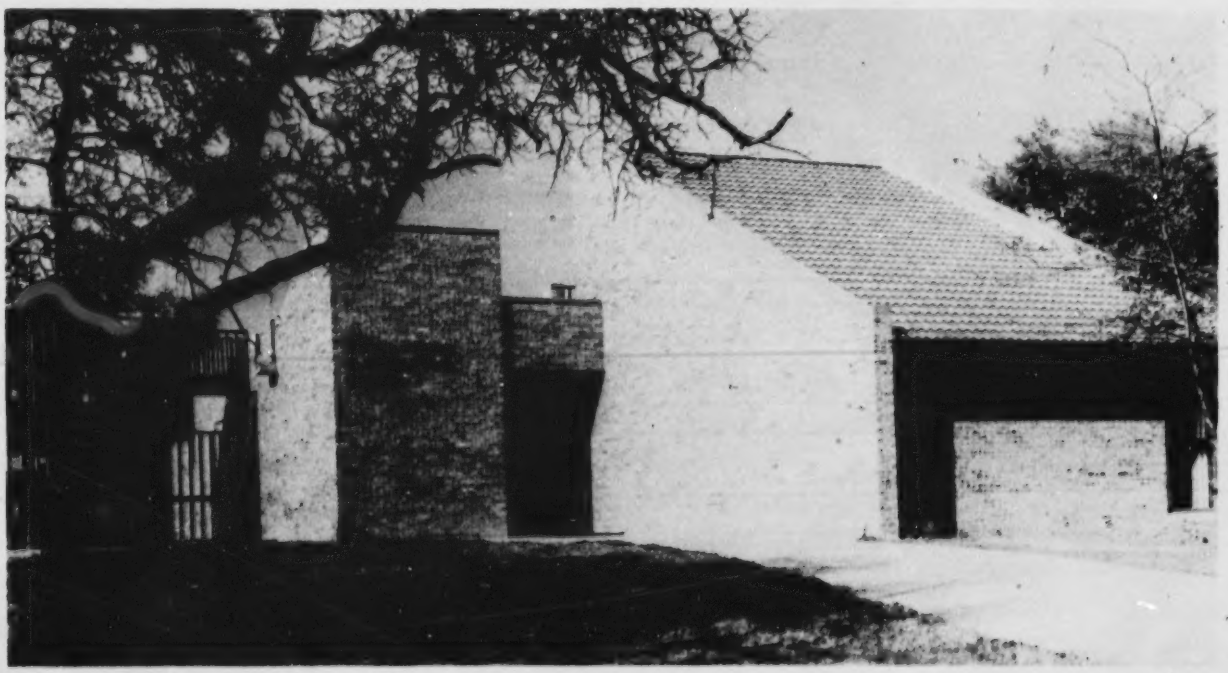


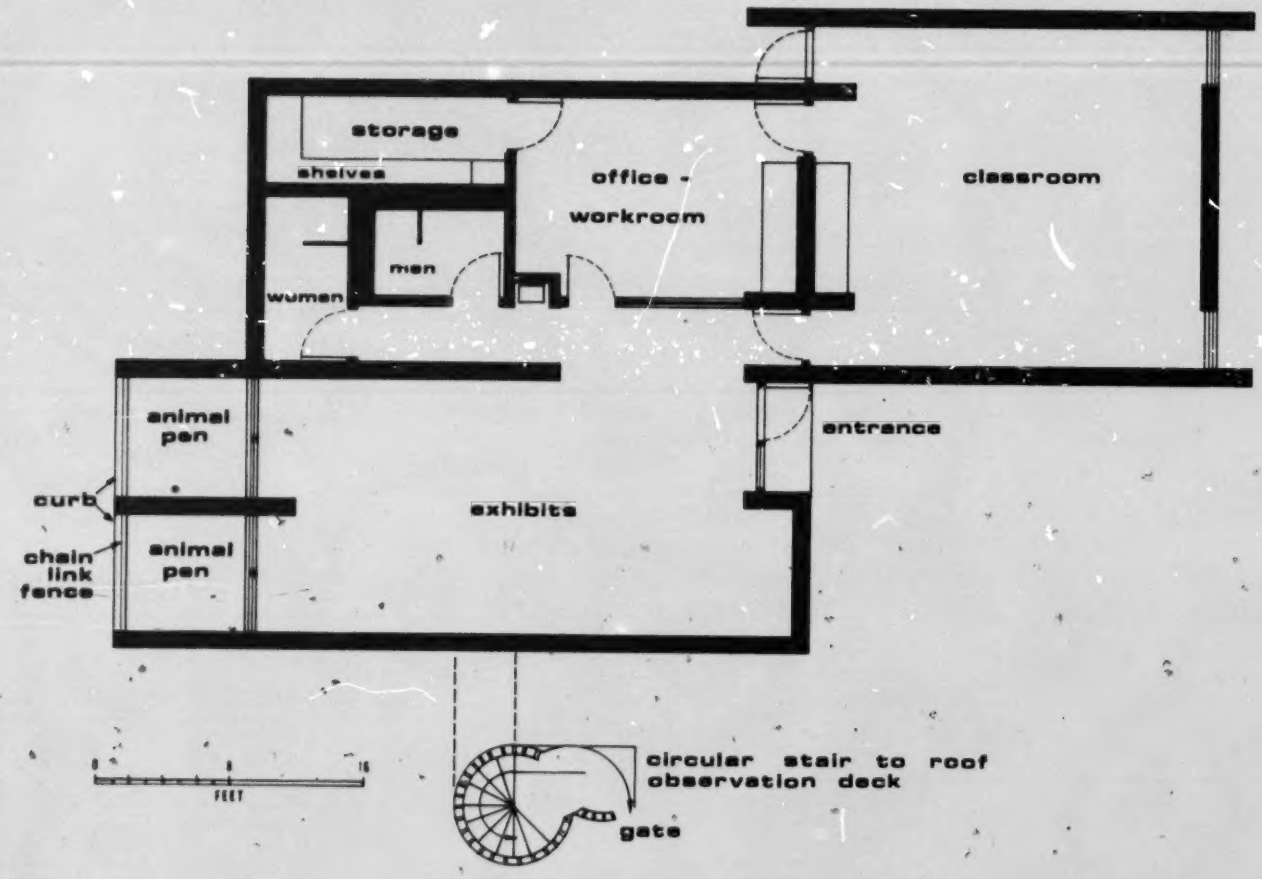
Narrative

Although the interpretive building's location on a high bluff affords the visitor a dramatic overview of the surrounding countryside, it also presents problems of access to many interesting features at the Fort Worth Nature Center. (The professional staff had no input in the siting or design of this facility.)

The building is architecturally attractive, and the traffic flow, sales counter, exhibit area, and library are suitable for casual visitors and small groups. But as the center is being used by more and larger groups, we find our space somewhat inadequate. There is a need for an auditorium to seat 100 people, larger restroom facilities that would accommodate the needs of the physically handicapped, more storage space, an exhibit workshop, and more office space.

Overall, the beauty of the building tends to distract from any drawbacks we are experiencing.




storage
shelves
office -
workroom
classroom
men
women
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entrance
curb
exhibits
chain
link
fence
animal
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circular stair to roof
observation deck
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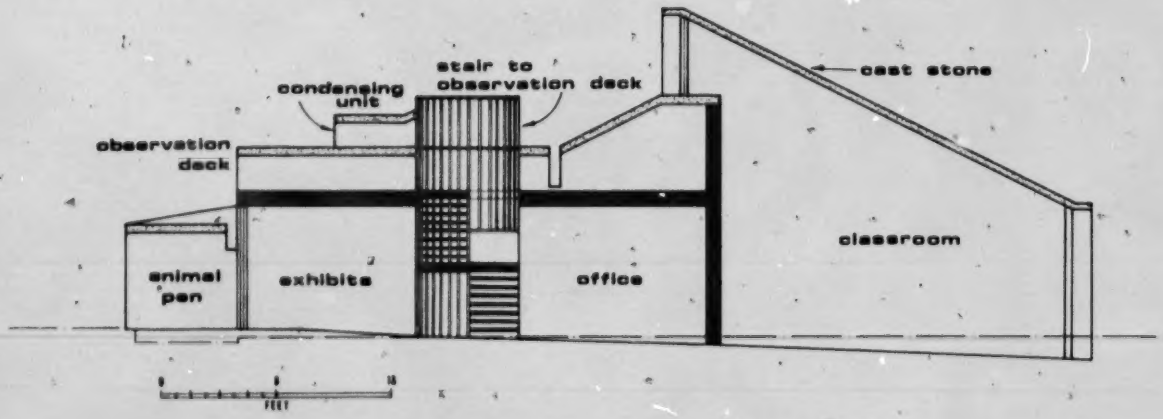

condensing
unit
stair to
observation deck
cast stone
observation
deck
classroom
animal
pen
exhibits
office
FEET

Audubon Center in Greenwich

Background Information

Address: 613 Riversville Road, Greenwich, Connecticut 06830

Sponsoring agency: National Audubon Society

Acreage of nature center: 477

Number of staff: permanent: 6; part-time: 3; volunteer: 80

Annual visitation: 25,000

Date interpretive building opened: 1942

Usable square footage in building: 2,840

Construction cost: $42,000 (not including value of original structure)

Designer: National Audubon Society staff (Duryea Morton)

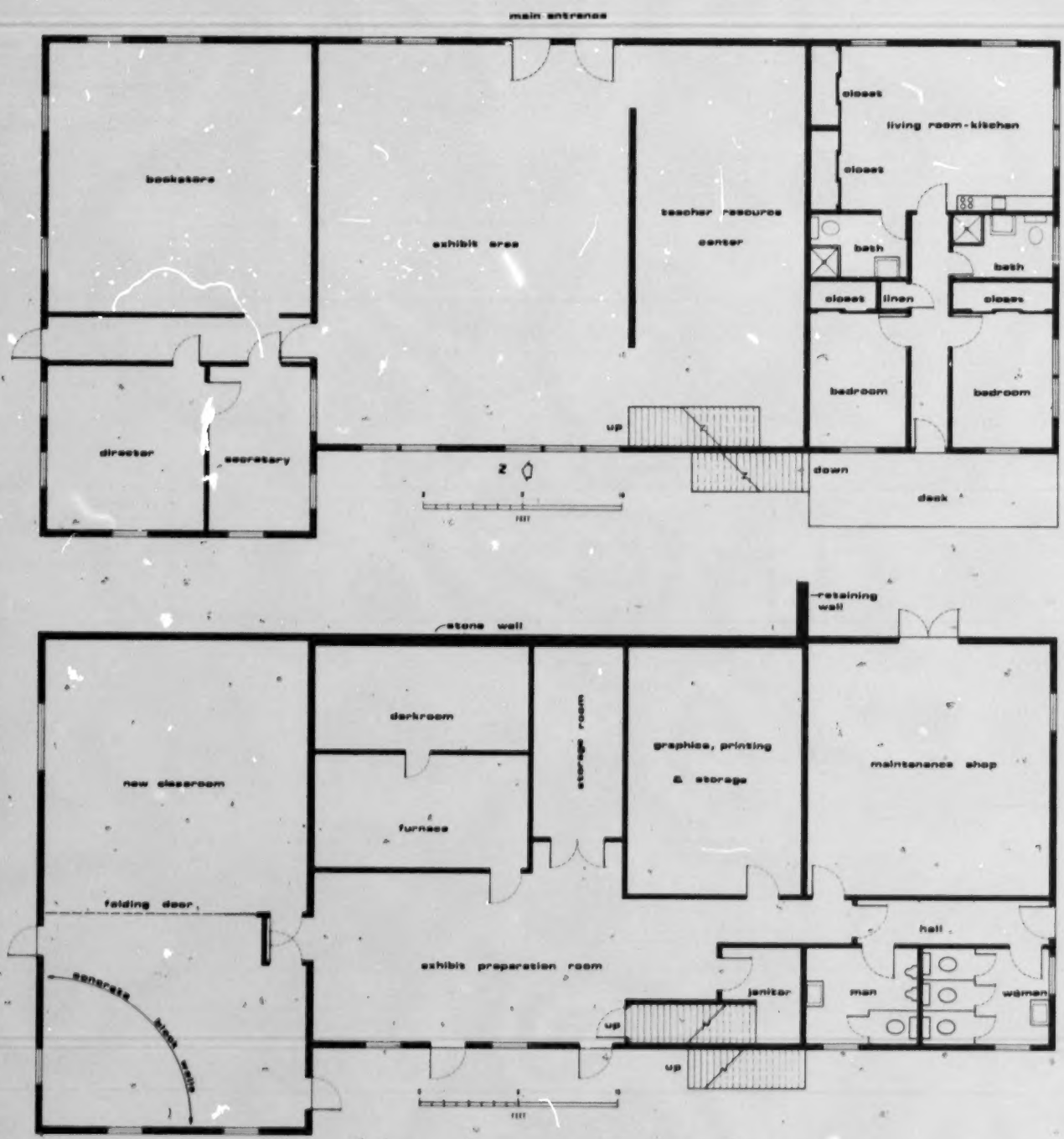
Narrative

The interpretive building at the Audubon Center in Greenwich was originally a horse barn. It has been remodeled and expanded twice since the center opened in 1942. At present the main floor includes the director's and secretary's offices, the bookstore, exhibit area, teacher resource center (with a very large collection of reference materials), and a separate two-bedroom apartment. The loft contains the naturalists' offices and a small workroom. The basement houses a large classroom, which can be divided into two smaller rooms, an exhibit preparation room, maintenance shop, darkroom, large storage room, restrooms, and furnace room. Large group meetings are held in a separate building.

Although the interpretive building has a definite esthetic charm and in general meets the center's program requirements, there are a number of desirable changes which would make this facility more functional:

- Naturalists should have individual offices located in a quiet section of the building, with adequate lighting and ventilation. It also would be desirable for them to have a view of the parking lot so incoming groups could be observed.
- A meeting room is necessary where the staff can assemble privately for meetings. Or, the director's office should be of sufficient size to accommodate staff meetings.
- Classrooms should be well lighted and have ample room for plenty of tables.
- Storage space should be dry and be planned so large exhibits could be moved in and out with a minimum of trouble. There should be ample shelf space for storing small items.
- The sales area should have adequate space for its inventory, either on carefully designed bookshelves, under counters, or in an adjacent storeroom. This would not only be more efficient and convenient, but the store would not have to be left unattended while stocks were replenished.
- Every teacher resource center should be designed with its principal use in mind. Will it be a circulating or noncirculating facility? Will it be used for individual research or group activities? In any case, it should be located away from areas used by the general public. This is not the case at Greenwich, and the teacher resource center is rather noisy when large groups are gathered in the adjacent exhibit room.

The Audubon staff have had direct planning input in all phases of the remodeling and expansion of the building. Although a number of design problems still need to be overcome, we are generally pleased with the facility.


main entrance
bookstore
exhibit area
teacher resource center
closet
living room-kitchen
closet
bath
bath
closet
linen
closet
bedroom
bedroom
up
down
desk
director
secretary
retaining wall
stone wall
darkroom
storage room
graphics, printing & storage
maintenance shop
new classroom
furnace
folding door
hall
exhibit preparation room
janitor
man
women
up
up
concrete block wall

#5

20

Quarry Hill Nature Center

Background Information

Address: 701 Silver Creek Road, N.W., Rochester, Minnesota 55901

Sponsoring agency: Rochester Park and Recreation Department and Rochester Independent School District #535

Acreage of nature center: 212

Number of staff: permanent: 3; part-time: 1; volunteer: 20

Annual visitation: 20,000

Date interpretive building opened: November 1972

Usable square footage in building: 3,899

Construction cost: $45,000 for materials; volunteer labor

Architect: Byron Stadsvold, Architectural Design Group, Inc., Gjelten, Shellberg, Johnson, Stadsvold, 1200 Fourth Avenue, S.W., Rochester, Minnesota 55901

Narrative

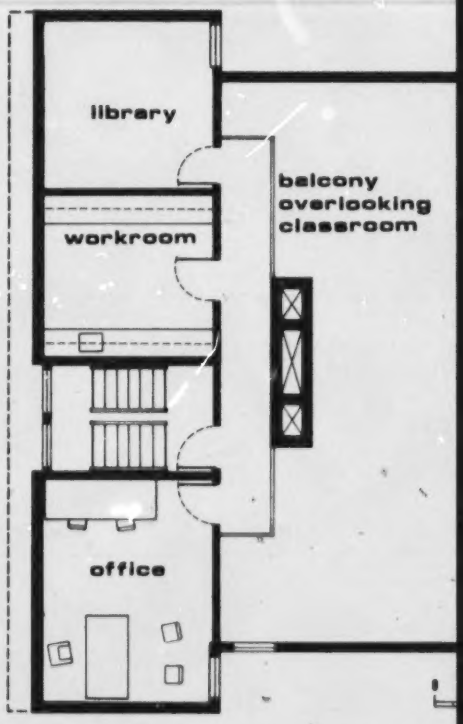
Quarry Hill Nature Center was built with funds subscribed by local individuals and organizations. Program development is a school function; with all elementary students visiting the center as part of their science curriculum. The Rochester school district has program responsibility; the Rochester Park and Recreation Department maintains the interpretive building and grounds.

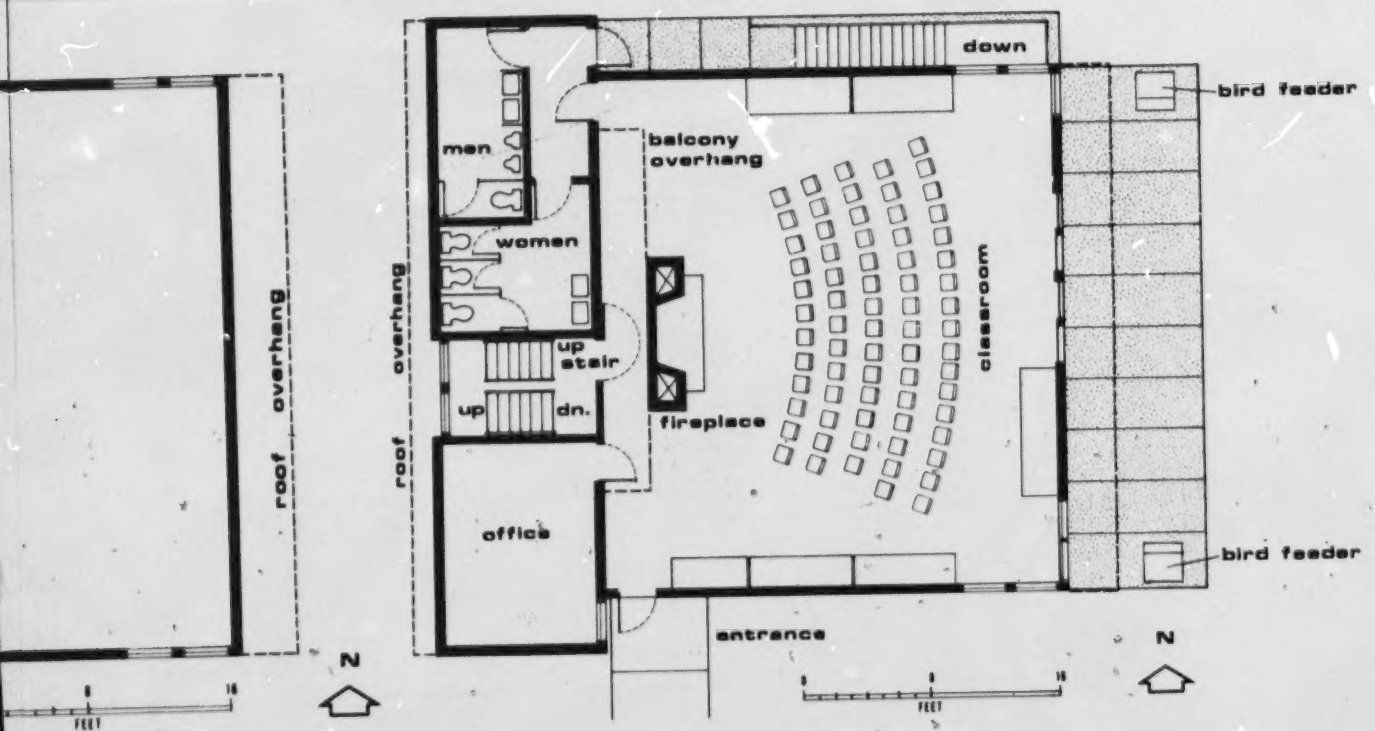
One of the outstanding features of the interpretive building is its ability to handle several groups totaling up to 120 people simultaneously. Traffic flows freely because people can enter or leave by any of four doors. This is an important design feature when a center deals with school classes.

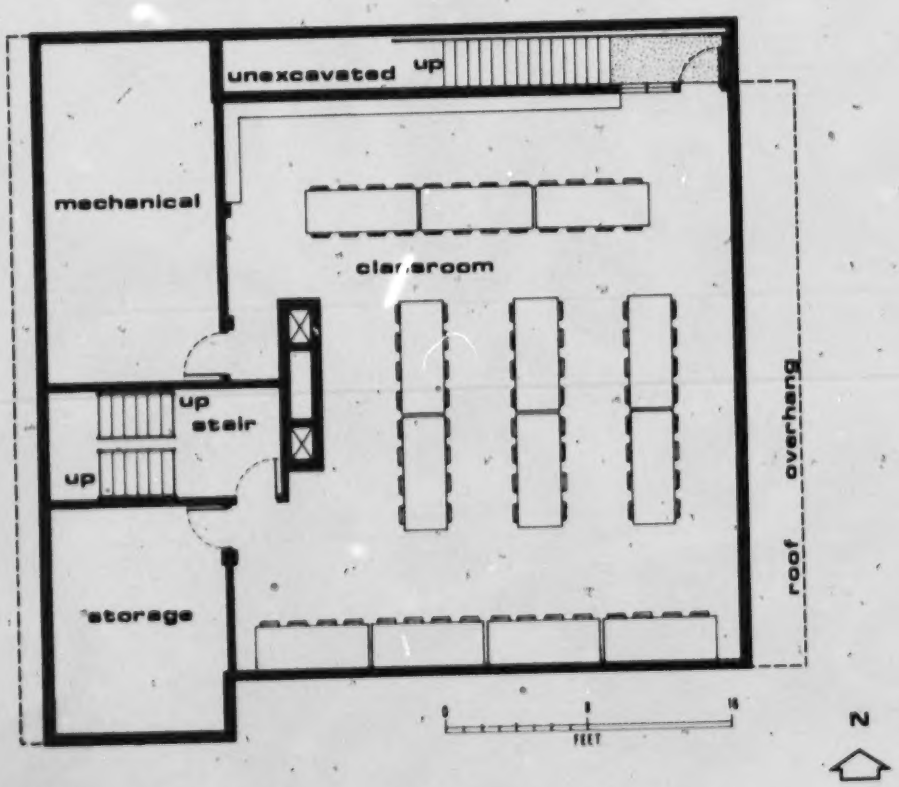
Both the interior and exterior walls are surfaced with unfinished cedar and allowed to weather. The cedar gives a natural appearance to the building and lowers maintenance costs. The high inside walls are excellent for displays and educational bulletin boards.

There are two recognized drawbacks in the building design: lack of storage space and problems with echoes in the main-floor classroom. The audio problems can be alleviated by hanging heavy draperies on the windows, but a solution for additional storage space has eluded us.

The staff had considerable input in the overall design of the building, and it seems to be well suited to the kind of education programs being conducted at this time.




roof overhang
men
women
up
stair
up
dn.
roof overhang
balcony overhang
fireplace
down
bird feeder
classroom
office
bird feeder
entrance
N
FEET
N
FEET


unexcavated
up
mechanical
classroom
up
stair
up
roof overhang
storage
FEET
N

Aullwood Audubon Farm

Background Information

Address: 9101 Frederick Road, Dayton, Ohio 45414

Sponsoring agency: National Audubon Society

Acreage of nature center: 125

Number of staff: permanent: 6; part-time: 2; volunteer: 2

Annual visitation: 30,000

Date interpretive building opened: 1963

Usable square footage in building: 4,000

Construction cost: $50,000

Designer: National Audubon Society

Narrative

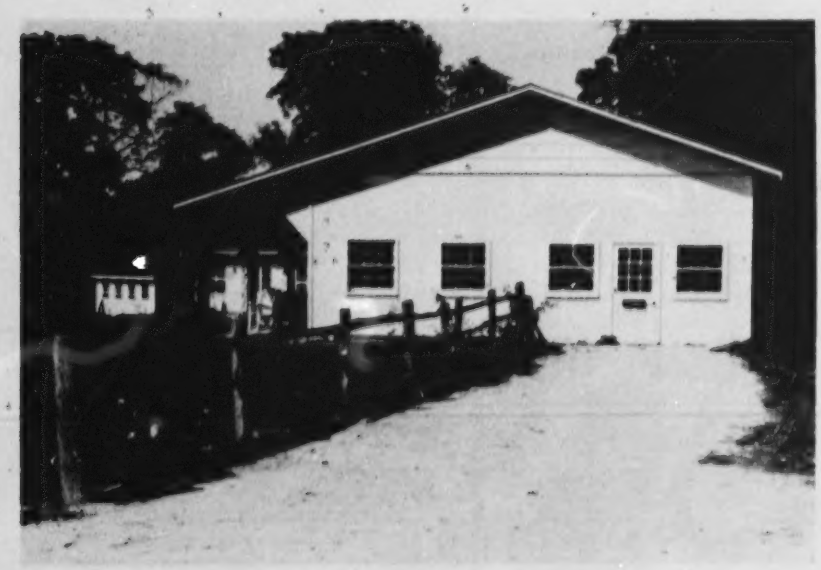
The interpretive building at the Aullwood Audubon Farm is strategically located near the main entrance to the property and is readily accessible to the nearby stock barns, herb garden, maple-syrup evaporating house, and trail system. It is situated on one of the highest points of the property, thereby affording visitors an excellent panoramic view of the adjacent fields, forest, and outbuildings.

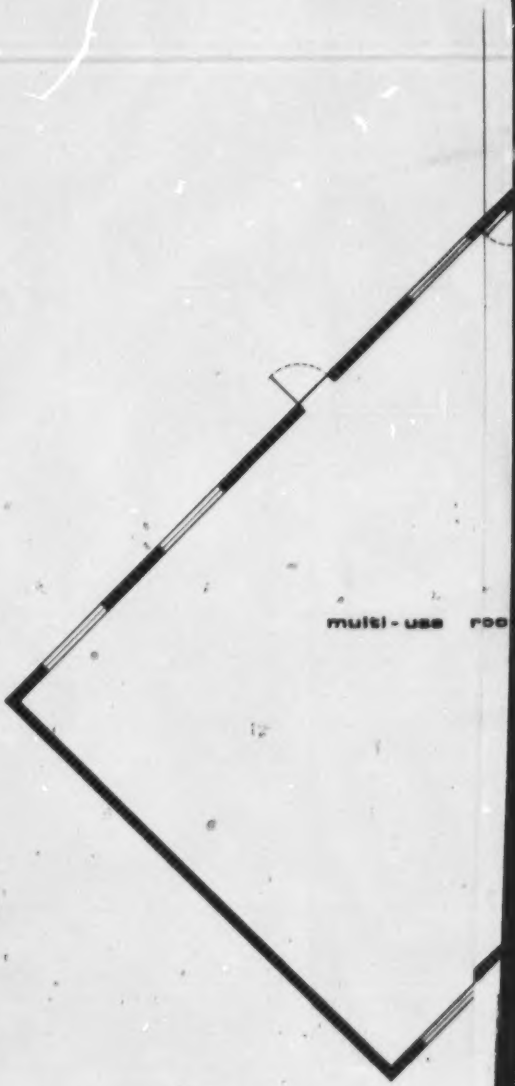
The exterior façade is of vertical tongue-and-groove lumber. Most of the interior rooms have utilized weathered barn siding, burlap panels, or rough-sawn paneling for the walls. The use of wood has created an appropriate atmosphere for the programs conducted at the farm.

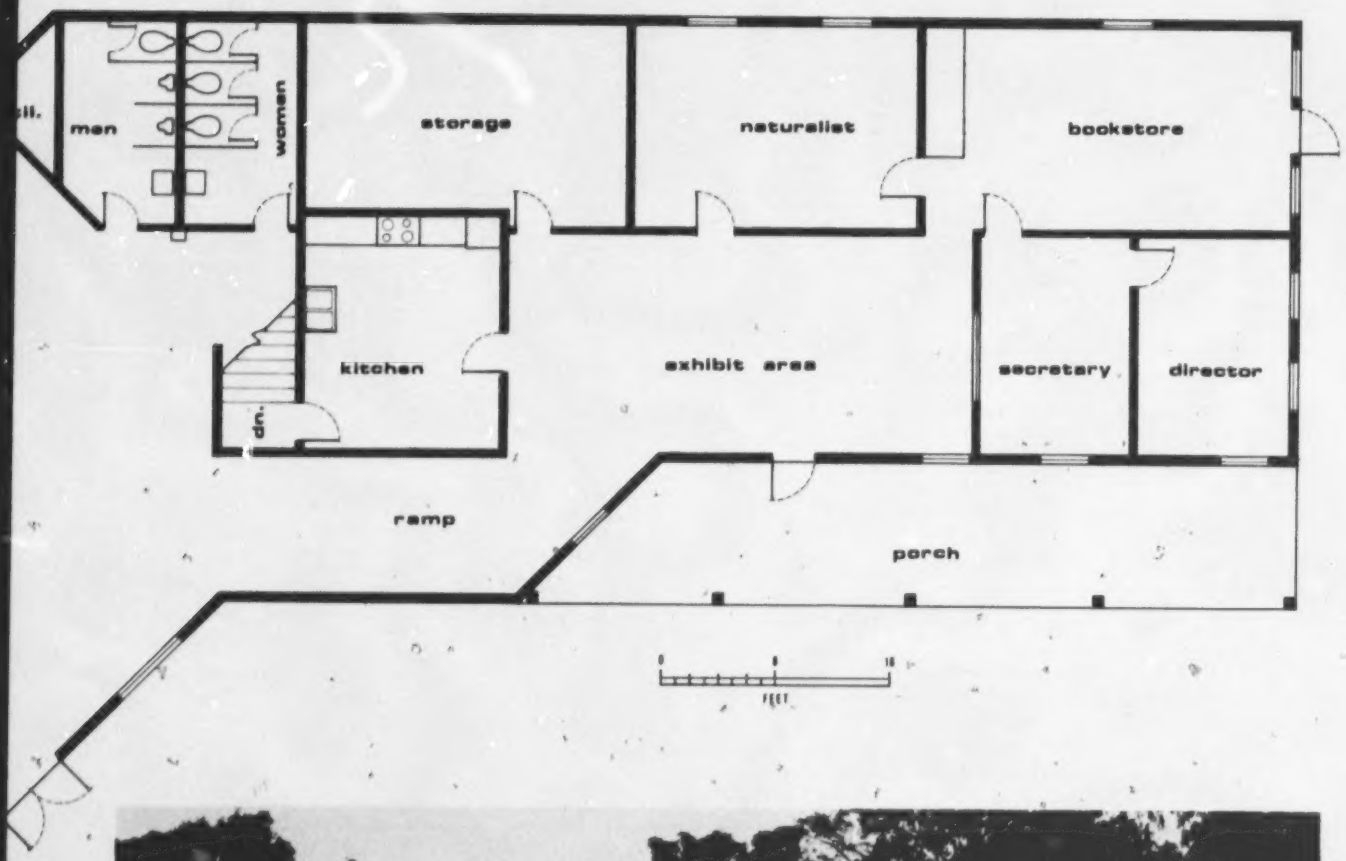
In 1973 a multi-use room was added to the original structure. It is used for a wide variety of activities, including slide and film presentations, library reference work, carding, spinning, weaving and dyeing wool, and candle dipping, as well as teacher workshops and course work with local schools and colleges.

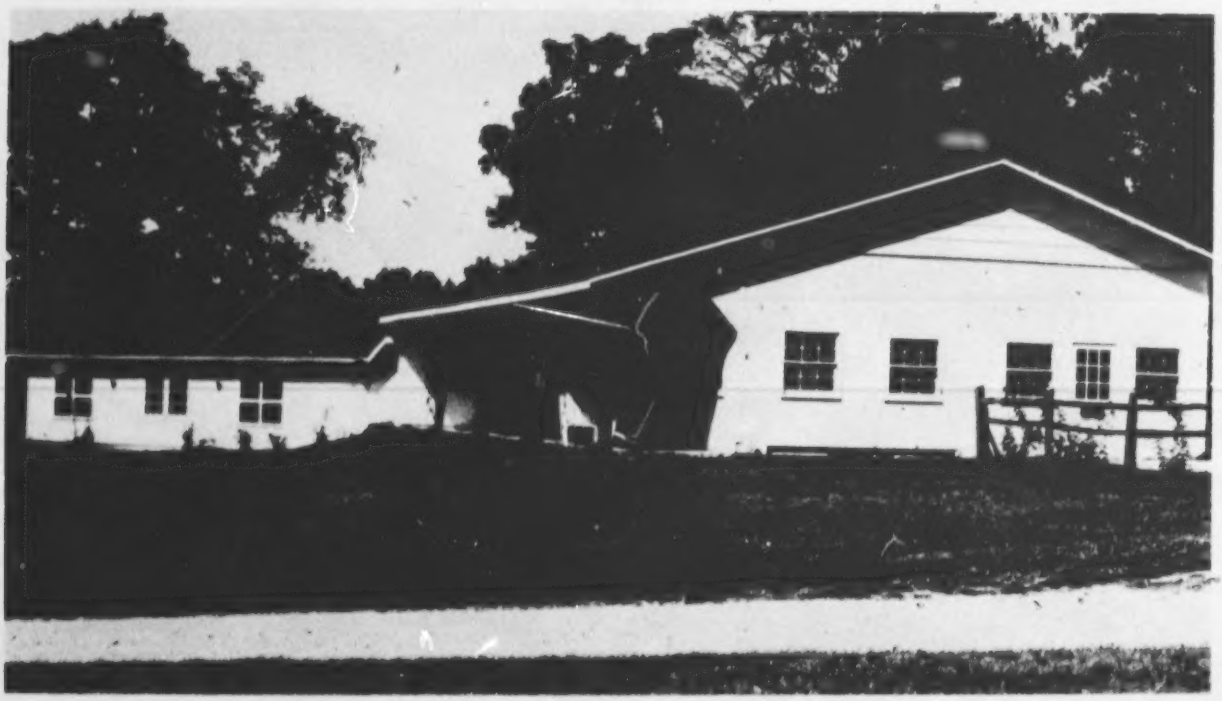
The internal traffic flow pattern of the interpretive building is very good. All visitors enter through the bookstore and pass directly into the exhibit room. (Both areas can be observed from the secretary's office.) From there the individual or group has the option of going directly outdoors or moving down a ramp to the multi-use room, restrooms, or kitchen.

The staff are very satisfied with the functional and utilitarian design of this building. Few obvious faults can be cited, except for the fact that the building lies directly under the main flight path of Dayton airport—a problem beyond our control.






men
women
storage
naturalist
bookstore
kitchen
exhibit area
secretary
director
dn.
ramp
porch
0
8
16
FEET



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24

Bergen County Wildlife Center

Background Information

Address: Crescent Avenue, Wyckoff, New Jersey 07481

Sponsoring agency: Bergen County Park Commission

Acreage of nature center: 81

Number of staff: permanent: 18; part-time: 5; volunteer: 3

Annual visitation: 280,000

Date interpretive building opened: June 1967

Usable square footage in building: 4,200

Construction cost: $100,000

Architect: W. Tjark Reiss, Kinsey Associates, Park Planning and Management Consultants, Livingston, New Jersey 07039

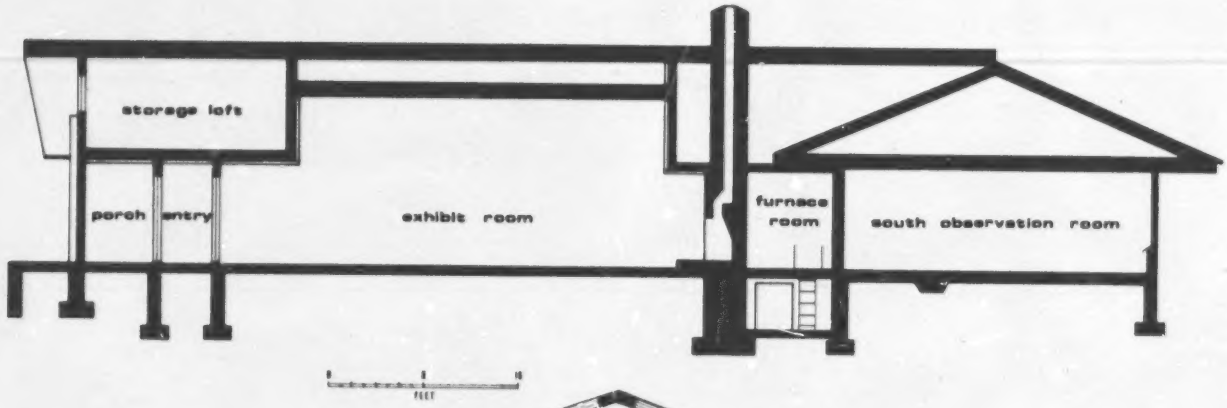
Narrative

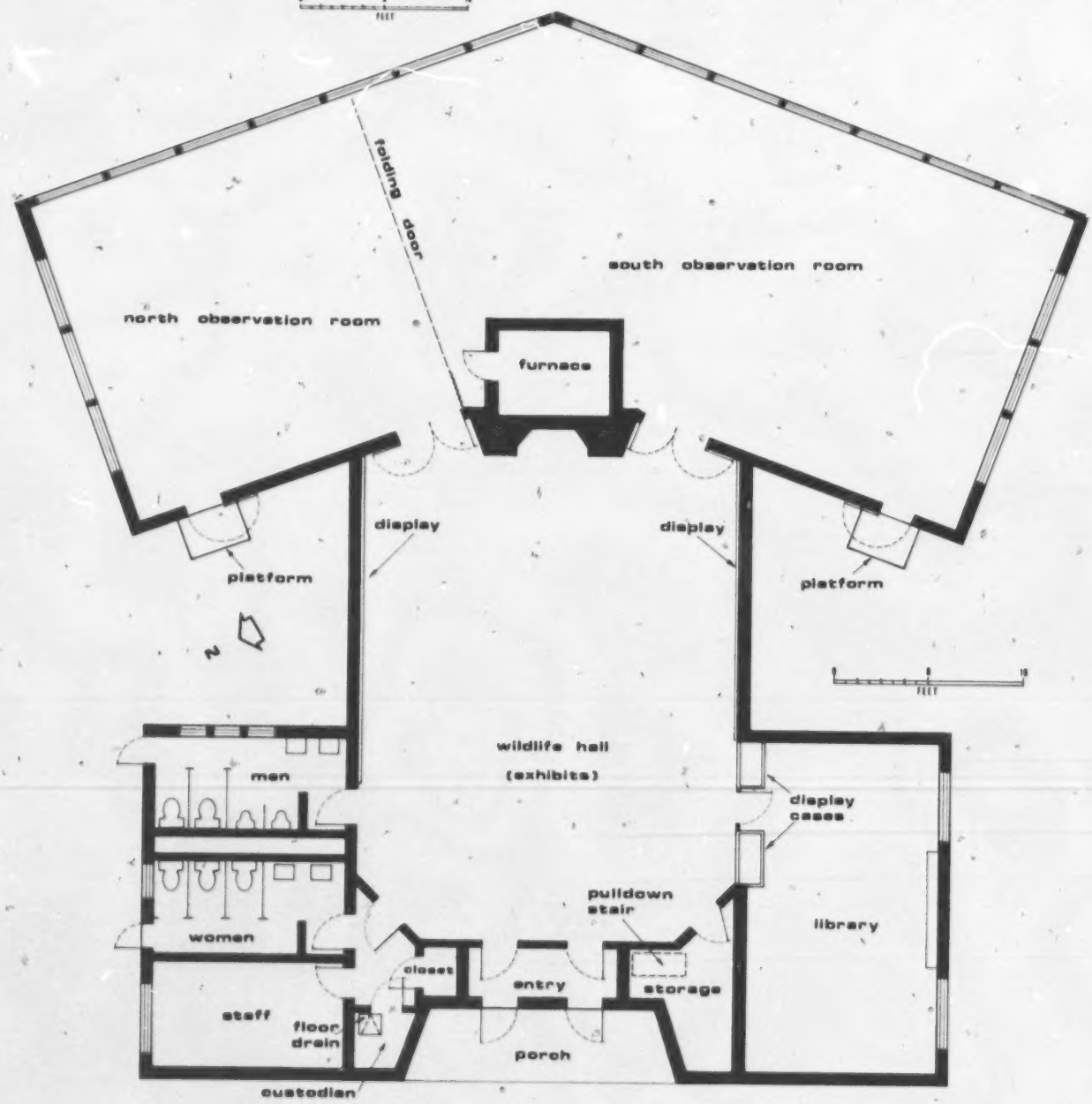
The interpretive building at the Bergen County Wildlife Center was an excellent facility for its original purpose of providing room for indoor displays and affording the general public an opportunity to view the adjacent waterfowl pond from indoors. Now, however, many environmental education programs are being conducted at the center. This usage, in combination with extremely heavy visitation by the general public, has caused a number of spatial problems.

The naturalist staff were not involved with the original design of the building, and no provision was made for classrooms, exhibit work space, or an auditorium. All classes and public programs are handled in one end of the V-shaped observatory, using drawdraperies and a folding door. This arrangement is unsatisfactory, for those in the rear of the audience find it difficult to see audio-visual presentations because of a low ceiling which limits the height of the viewing screen. Additionally, it is difficult to hear if simultaneous programs are in progress.

Other aspects of the building are adequate and satisfactory, including the traffic flow, restrooms, heating system, natural lighting (from skylights), artificial lighting, and library, which doubles as a workroom.

In conclusion, the interpretive building, although well designed and excellently located on the site, is lacking somewhat in its value as an educational center. The naturalists who use this facility for teaching would like to have permanent classrooms, space set aside for work areas, more storage space, and an increase in office space. It also would be valuable for some allowance to be made for an audio-visual room. None of these improvements could be made without an addition to the present building.


storage loft
porch
entry
exhibit room
furnace room
south observation room
FEET


folding door
south observation room
north observation room
furnace
display
display
platform
platform
N
FEET
wildlife hall
(exhibits)
men
women
display cases
pulldown stair
library
closet
entry
storage
staff
floor drain
porch
custodian

Rogers Environmental Education Center

Background Information

Address: Box Q, Sherburne, New York 13460

Sponsoring agency: New York State Department of Environmental Conservation

Acreage of nature center: 580

Number of staff: permanent: 5; part-time: 17-20 (summer); volunteer: 6-8 (short periods of time)

Annual visitation: 200,000 plus

Date interpretive building opened: June 11, 1968

Usable square footage in building: 4,500

Construction cost: $97,000

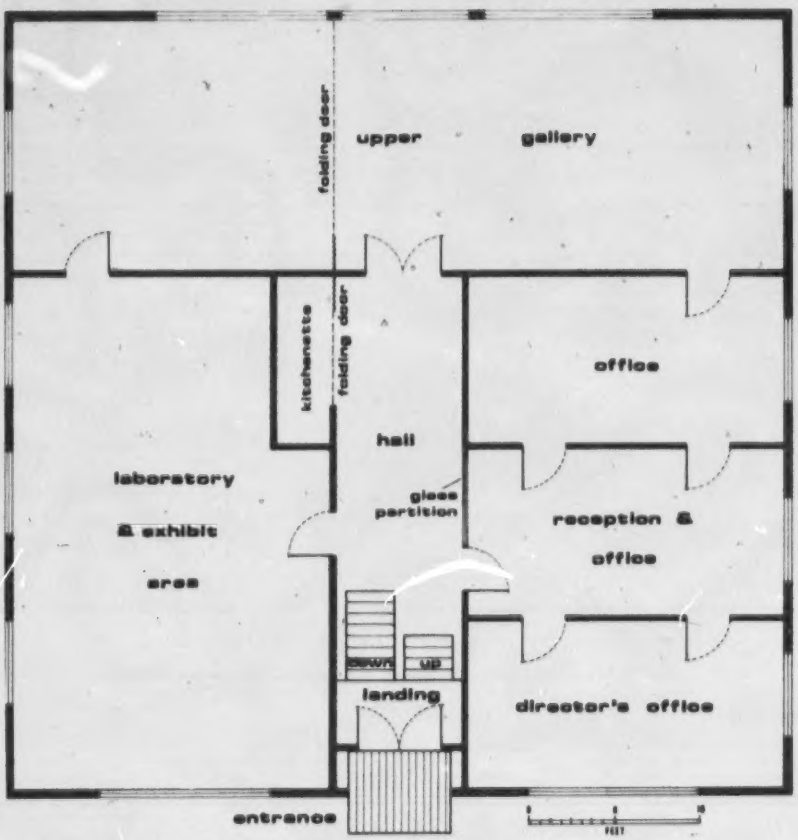
Architect: Barker and Henry, Glens Falls, New York 12801

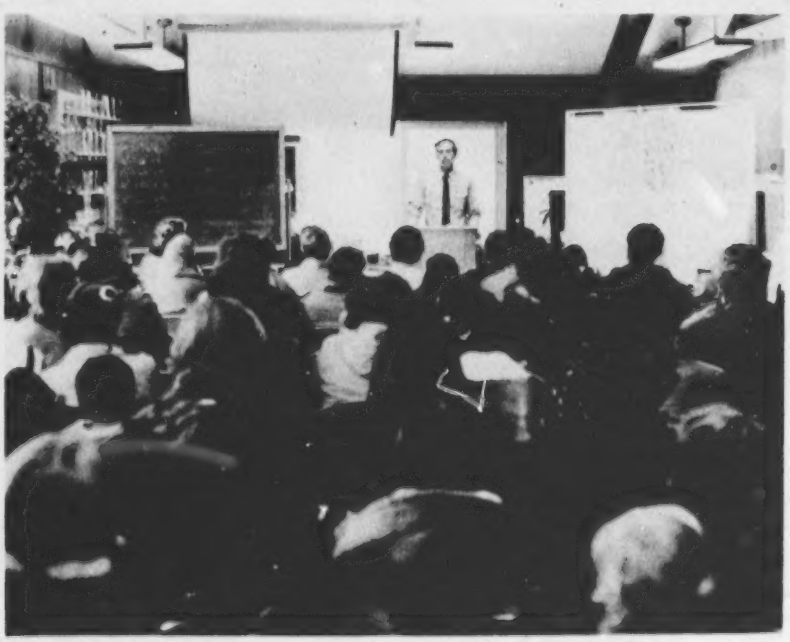
Narrative

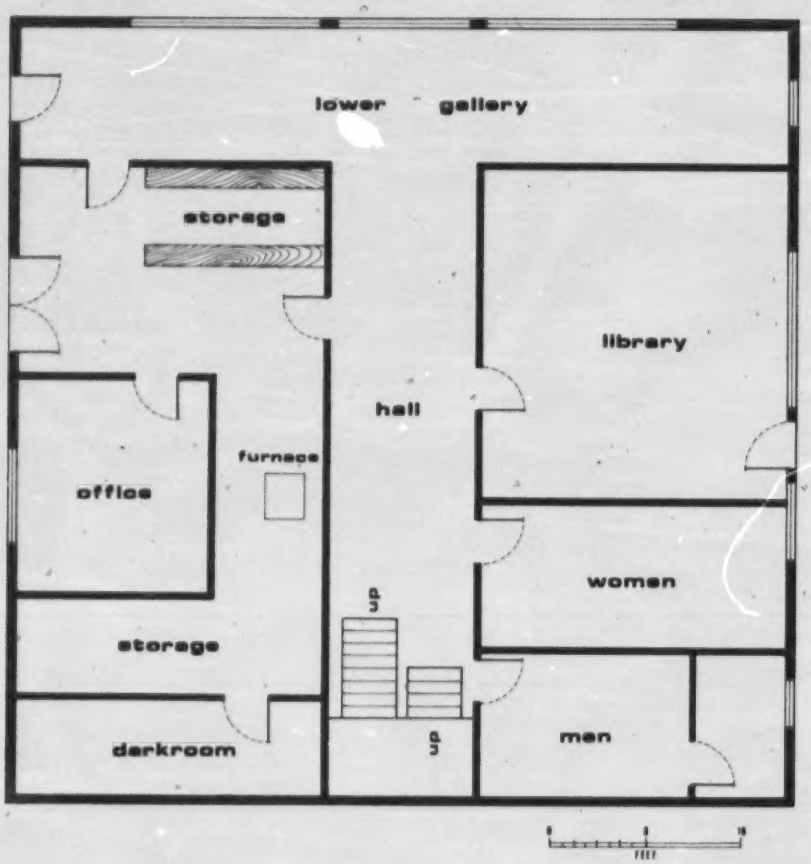
The staff of the Rogers Environmental Education Center are generally satisfied with the overall design of the interpretive building. Some of its outstanding features include a simple but attractive exterior appearance, esthetic surroundings, very popular interior viewing galleries which overlook an adjacent marsh, and an excellent library and darkroom.

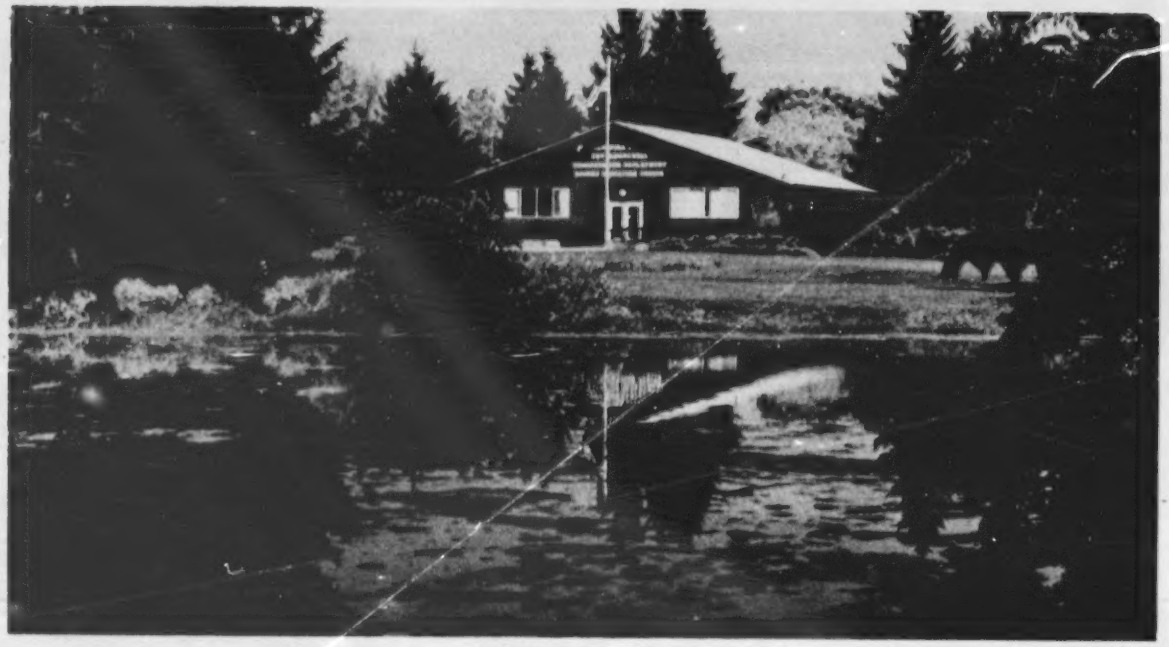
The building was designed for a staff of four or five people, and now there are twice that many. Consequently, there is a major shortage of office and storage space. The restrooms are totally insufficient for the large numbers of visitors using the facility. The furnace is inadequate because of heat loss from large, single-pane windows, poor insulation, and high cathedral ceilings. The result is a cold and drafty building during the winter and a questionable conservation image in light of the nation's present energy shortages.

The staff of the center had little, if any, input in the planning or design of the interpretive building






lower gallery
storage
library
hall
furnace
office
women
storage
darkroom
men
UP
UP
FEET



Wood Lake Nature Interpretive Center

Background Information

Address: 735 Lake Shore Drive, Richfield, Minnesota 55423

Sponsoring agency: City of Richfield

Acreage of nature center: 150

Number of staff: permanent: 6; part-time: 7; volunteers and interns: 50

Annual visitation: 70,000

Date interpretive building opened: May 1971

Usable square footage in building: 4,656

Construction cost: $213,000

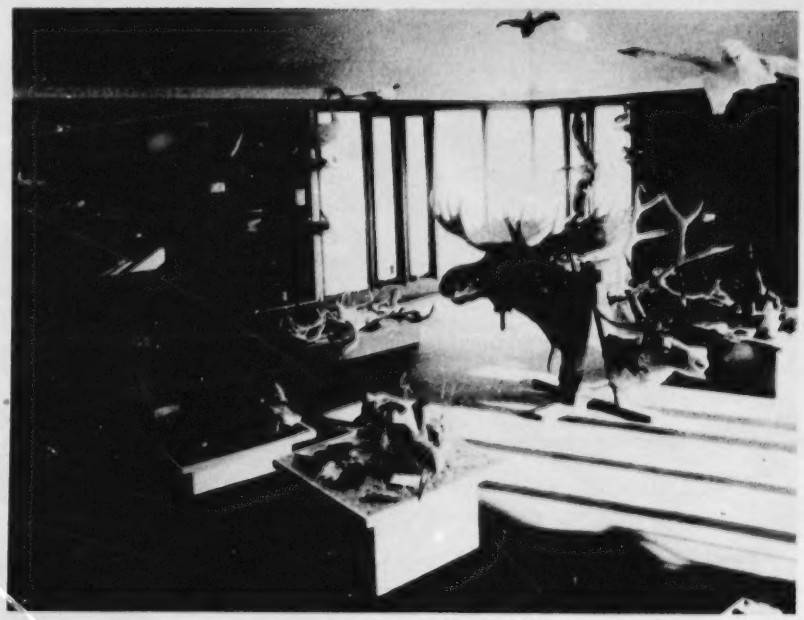
Architect: Bob Quanbeck, Sovik-Mathve-Sathrum-Quanbeck, Box 390, Northfield, Minnesota 55057

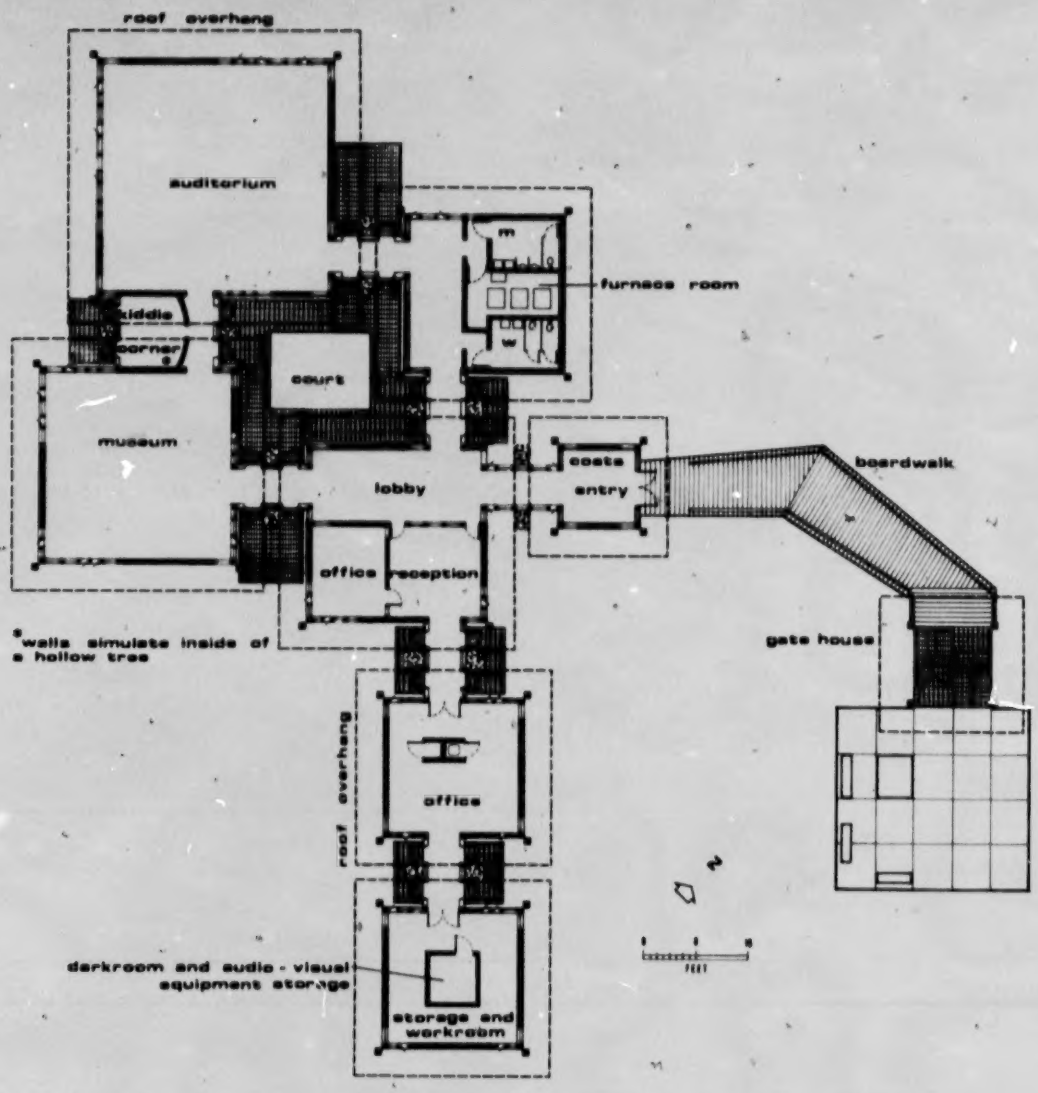
Narrative

Through the foresight of the residents of Richfield, a 150-acre marshland was set aside in the midst of a metropolitan area, with a freeway along one side and 747s overhead. On the northern edge of the marsh is the Wood Lake Nature Interpretive Center building, which contains an auditorium, museum, office, laboratory, storage area, and restrooms.

Overall, we are very pleased with the location and design of the building complex. The chief advantage of the modular design is its capability of handling two or three different groups without much interference with each other. It also lends itself well to a circular traffic flow. In addition, the modular design helps to give the visitor a feeling of privacy and, coupled with many windows, it encourages people to direct their attention outside. We have plenty of room for exhibits, and the auditorium-classroom area usually is adequate.

One drawback of the modular design is the excessive number of doors—36—which creates a problem at lock-up time. Our storage and workroom building is a necessity. Not part of the original design, it was added later to increase the working space of the staff. This storage building was designed to be as energy-conserving as possible, with thick insulation and an earth berm around three sides. We would like to have it solar-heated eventually.




roof overhang
auditorium
furnace room
court
museum
lobby
coats
entry
boardwalk
office
reception
*walls simulate inside of a hollow tree
gate house
roof overhang
office
darkroom and audio - visual equipment storage
storage and workroom
N
FEET

Whitney H. Eastman Nature Center

Background Information

Address: Route 3, Osseo, Minnesota 55369

Sponsoring agency: Hennepin County Park Reserve District

Acreage of nature center: 200 within 4,500-acre Elm Creek Park Reserve

Number of staff: permanent: 5; part-time: 4; volunteer: 0

Annual visitation: 50,000

Date interpretive building opened: September 1974

Usable square footage in building: 5,000

Construction cost: $175,000

Architect: Douglas A. Baird, 1545 Hennepin Avenue, Minneapolis, Minnesota 55403

Narrative

The Whitney H. Eastman Nature Center in Elm Creek Park Reserve was opened to the public in September 1974. Now we are in a position to evaluate the extent to which building design and location have aided or hindered our attempts to interpret the natural history of the reserve.

The low profile of the building and its natural-wood look create an effective blend of man-made structure with surrounding woods. Inside, the large glass windows and the soft colors of the walls and carpet seem to make visitors feel comfortable and relaxed. The angular-shaped rooms are esthetically pleasing but are very impractical. It is difficult to find a good place to project slides or show movies. Because so much space is taken up by corners, the building feels crowded when a small group enters.

Sliding wall panels allow us to divide the floor space in a variety of ways, a system which has proved extremely practical and useful. All walls in the building are covered by a light brown burlaplike material. Thumbtacks, staples, and even small nails can be used to put up exhibits without leaving holes afterward.

Unfortunately, a wooden panel built below the expanse of glass windows is just at head level when one sits down. It blocks the view into the forest.

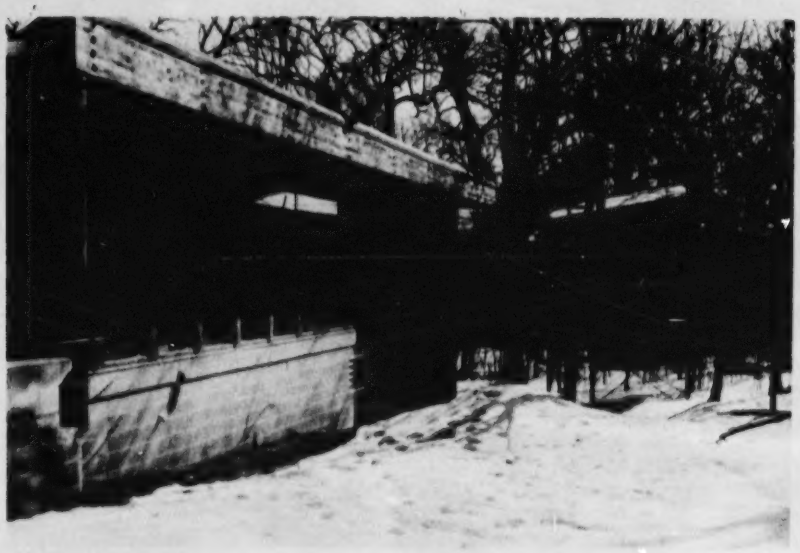
Lighting in the building is good, although when a room is divided by sliding panels it becomes too poorly lighted to read, especially on cloudy days. The exhibit spotlights on sliding tracks, however, are excellent.

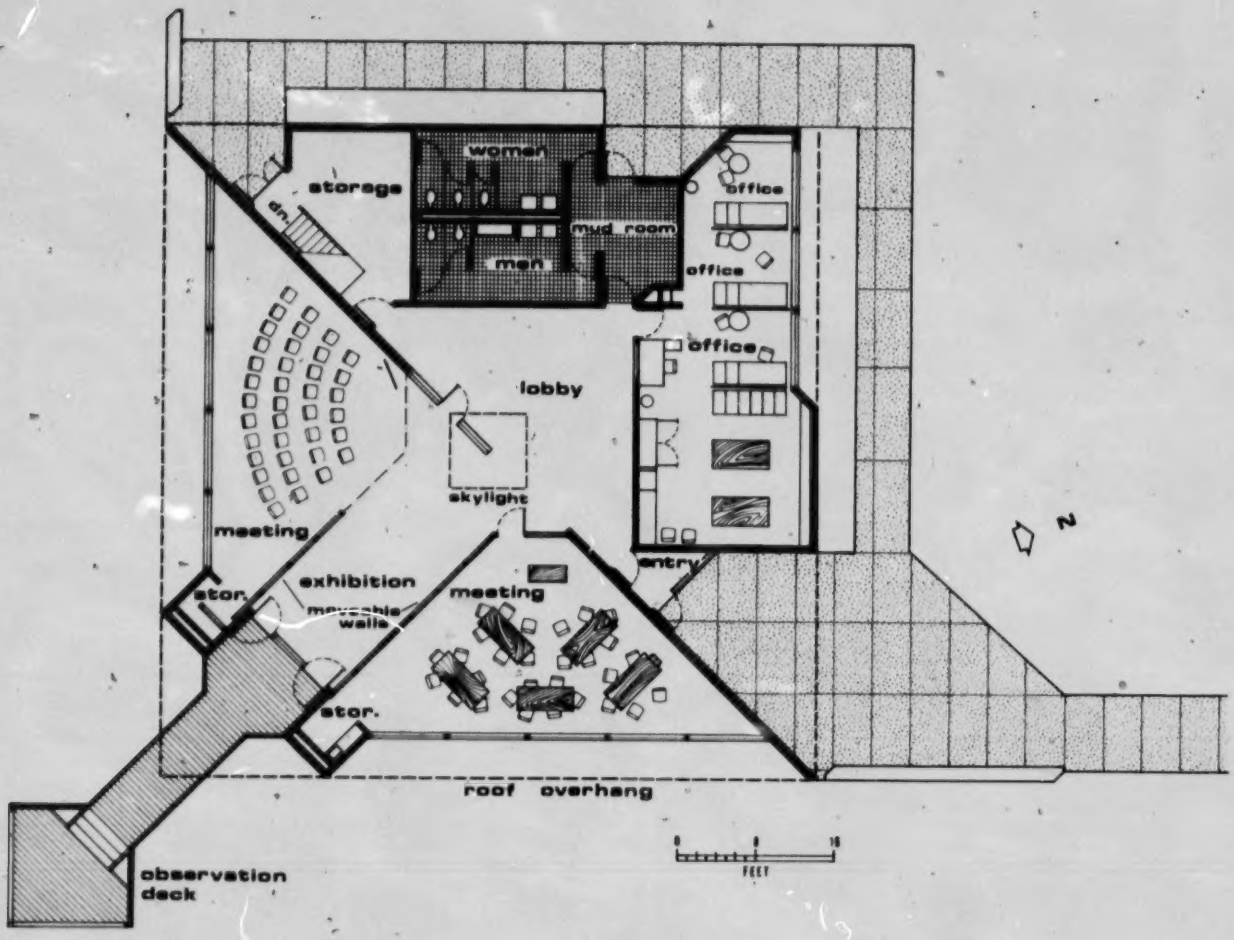
Four furnaces heat different zones in the building. We are comfortable all winter no matter what the outside temperature.

We can observe the arrival of visitors from our individual offices because each desk looks out on the parking lot and entrance walkway. But the head-high partitions between desks are very inadequate. Sound carries too easily, making concentration difficult and private conversations impossible. The office situation is our most serious problem.

Because we have no lunchroom facilities, we are forced to allow groups to eat in the small exhibit area or outside.

The restroom facilities are positioned so we can close off the rest of the building, yet leave them available to off-hour visitors. This has proved useful on a number of occasions.




women
storage
dn
mud room
men
office
office
office
lobby
skylight
meeting
entry
N
stor.
exhibition
meeting
stor.
roof overhang
observation
deck
0
8
16
FEET

15

82

Fontenelle Forest Nature Center

Background Information

Address: 1111 Bellevue Boulevard North, Bellevue, Nebraska 68005

Sponsoring agency: Fontenelle Forest Association (private, nonprofit corporation)

Acreage of nature center: 1,417

Number of staff: permanent: 5; part-time: 5; volunteer: 45

Annual visitation: 51,000

Date interpretive building opened: 1966

Usable square footage in building: 5,140

Construction cost: $128,000

Architect: Charles H. Norton, Neil Astle & Associates, 533 North 86 Street, Omaha, Nebraska 68114

Narrative

The ridgetop location and overall design of the Fontenelle Forest interpretive building have proved to be esthetically pleasing, generally functional, and efficient. The rough-sawn cedar interior walls accented with warm-colored panels, the beam and plank ceilings, and ample natural as well as track-mounted incandescent lighting combine to accent the uncluttered and spacious quality of each room.

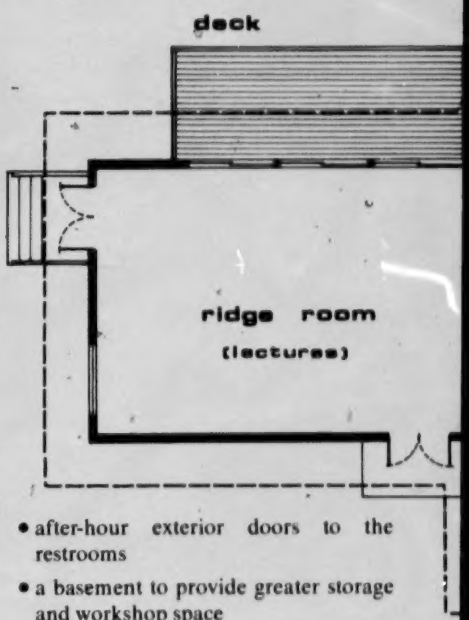
The Ridge Room seats up to forty people and is used primarily for lectures and demonstrations. It was the original structure at Fontenelle Forest, serving as an all-purpose building during the initial stages of program development. Exhibits depicting native fauna and flora interspersed among aquaria, terraria, and a thriving beehive occupy three walls of the room. The nature center gift shop occupies the remaining wall.

In 1969 the Ravine Room and lobby were added to the original structure. This improvement provided a 106-seat auditorium for lectures, films, and slide presentations. Lighting, audio, and rear-screen projection equipment are remotely controlled from the speaker's podium. Bronze-colored, light-absorbing glass windows eliminate the need for shades during an audio-visual presentation, yet do not obscure the view of the timbered slopes outside. The concrete floor and fiberglass chairs insure low maintenance, even with intensive use.

The lobby is spacious and includes three large exhibit bays which illustrate the topography, human history, and natural history of Fontenelle Forest. Along the outside wall, dioramas depict the center's three major natural communities: prairie, loess ridges and ravine, and marsh. Live animals highlight and animate all these exhibits. A donor recognition wall adjacent to the main entranceway tastefully acknowledges the support of major contributors to this privately supported center. A stairway leads from the lobby to a rooftop observation platform. This facility affords visitors a treetop view of the many creatures living among the stately bur oaks on the slope below the building.

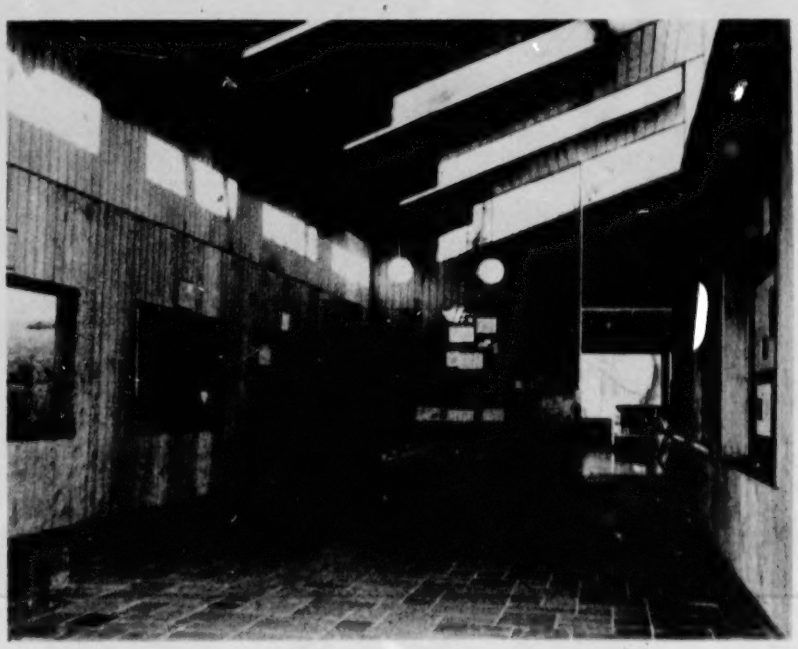
The office wing, which was added in 1971, comprises a large office for the director, a combined office for the secretary-receptionist and administrative assistant, two smaller offices for the naturalist and ranger, a darkroom, workroom, library, and storeroom. Large windows in most of the rooms afford a view of the surrounding forest.

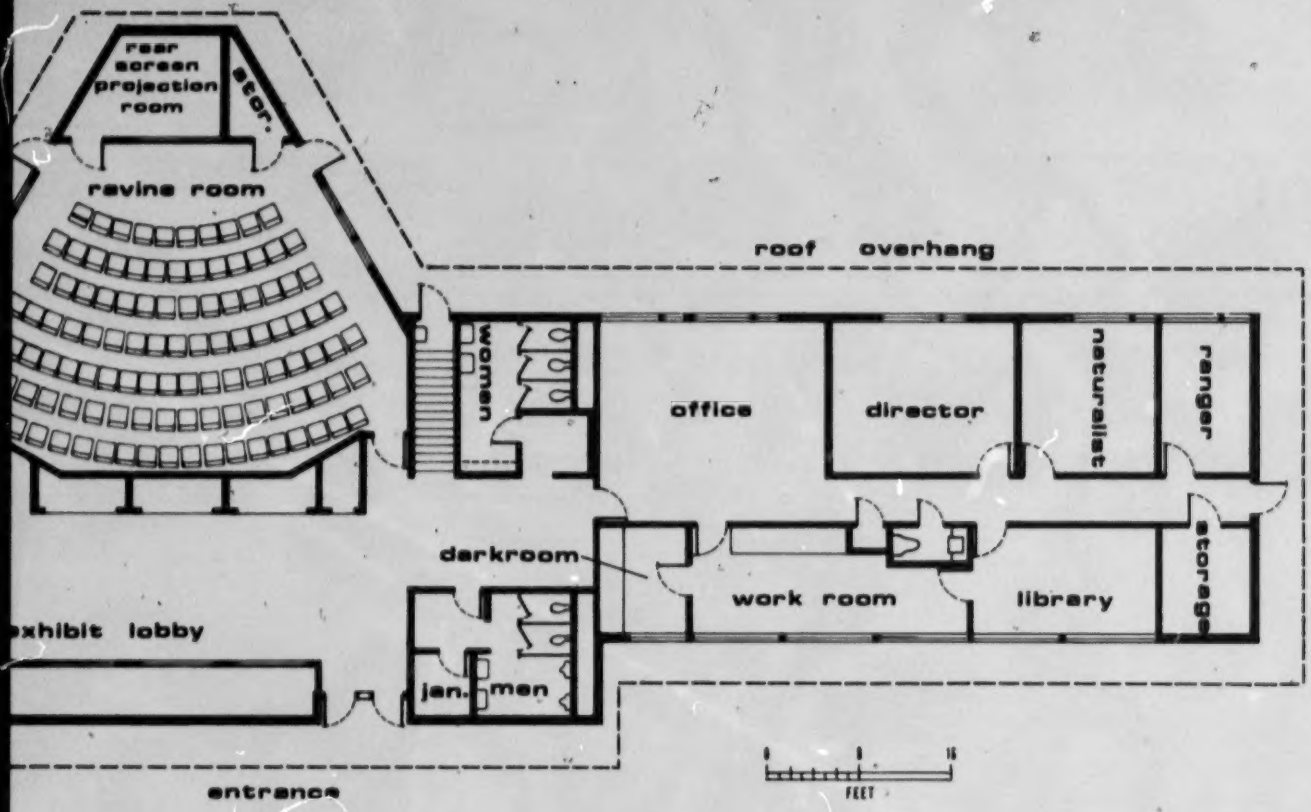
Despite the "add-on" sequence of development, the three areas in the interpretive building are remarkably coherent and compatible, thanks to the guidance of a professional architect. Nevertheless, if it were possible to turn back the hands of time and have an opportunity to plan the building as a total unit, the following changes would be beneficial:

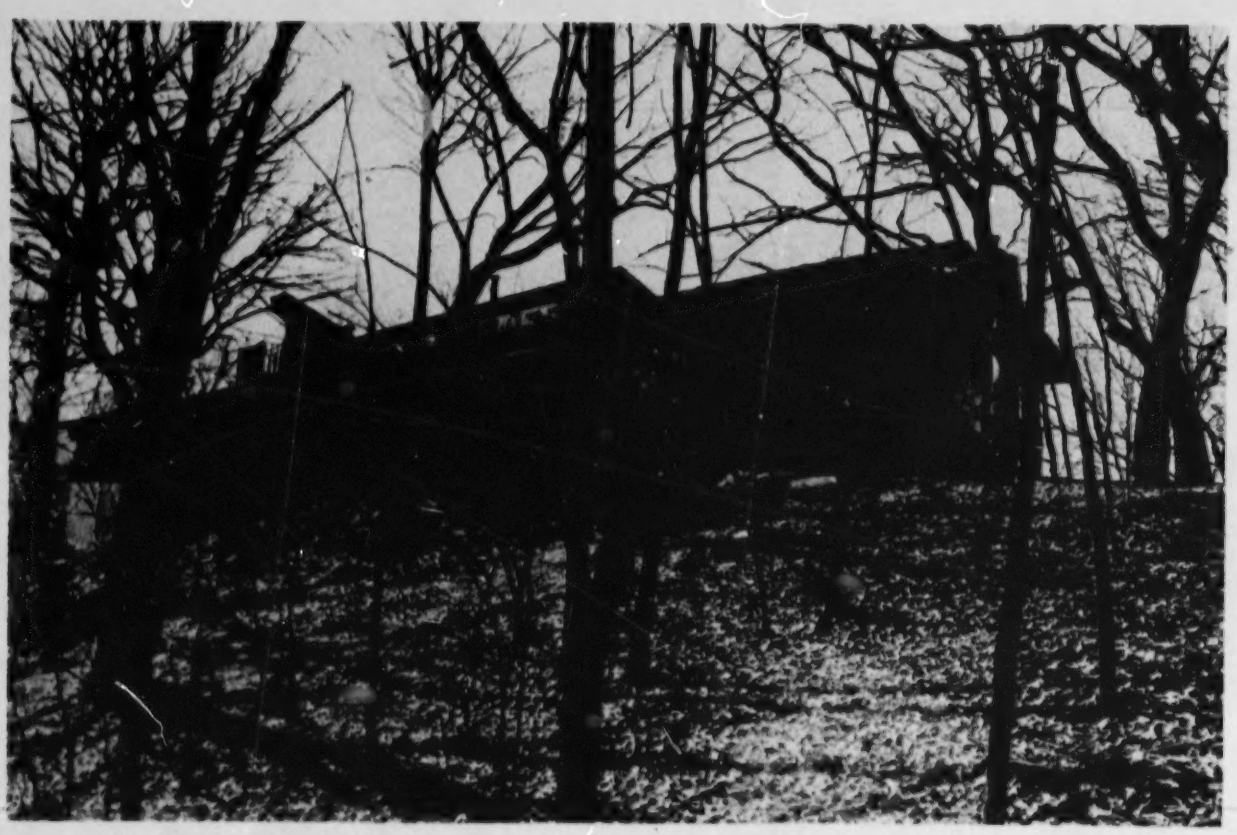


- after-hour exterior doors to the restrooms
- a basement to provide greater storage and workshop space
- more sound insulation in the interior walls, and thermal insulation in the exterior walls
- solar heating units.

The interpretive building is a product of the nature center staff and board of directors working in close cooperation with a competent local architect.




rear screen projection room
rear.
ravine room
roof overhang
women
office
director
naturalist
ranger
darkroom
work room
library
storage
exhibit lobby
jan.
men
entrance
FEET



Rocky River Trailside Interpretive Center

Background Information

Address: Rocky River Reservation, Cleveland Metroparks, Valley Park Drive, North Olmsted, Ohio 44070

Sponsoring agency: Cleveland Metropark System

Acreage of nature center: 100 within 4,000-acre regional park

Number of staff: permanent: 6; part-time: 3-4; volunteer: 60-80 in training

Annual visitation: 116,250

Date interpretive building opened: October 1971

Usable square footage in building: 6,000

Construction cost: $285,000

Architect: Dickson & Dickson Architects, 12025 Shaker Boulevard, Cleveland, Ohio 44120

Narrative

When evaluating a building and how it functions, the very first thing to consider is its setting. The site of our interpretive building at Rocky River Trailside Interpretive Center is very fortunate because visitors have a spectacular view of the cliffs of the Rocky River Valley. Esthetically, the site was a good choice. There are two functional drawbacks, however. The building sits on a long-established, treacherous trail which runs along the edge of the river and up a steep ridge to the summit of Fort Hill. People still insist on using this route, despite the establishment of alternative, well-marked trails. The other drawback is the close proximity of the Cleveland airport, with its attendant noise.

The all-wood construction of the building provides a feeling of warmth and homogeneity which no other type of construction seems to give.

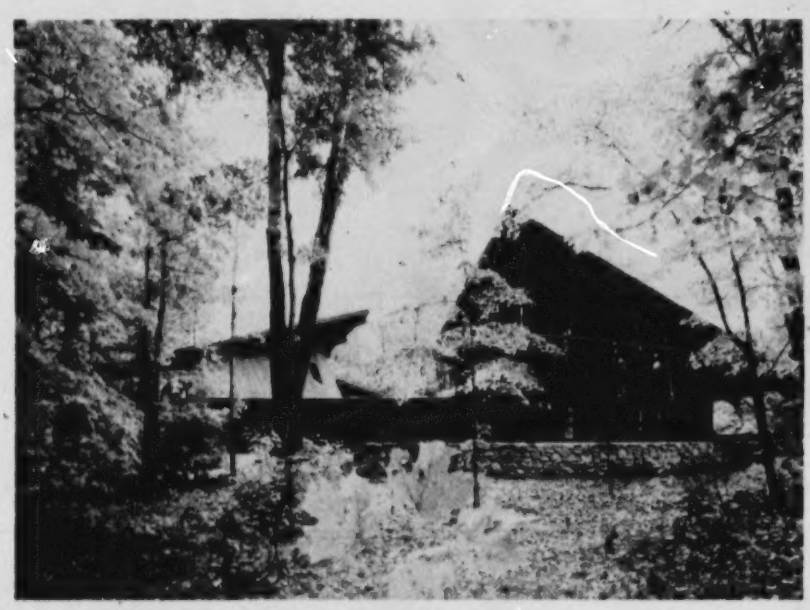
The location of the central office allows it to serve well as a focus for all people coming in the front entrance. On the other hand, it affords a poor view of the exhibit area and no view of the approaches to the center.

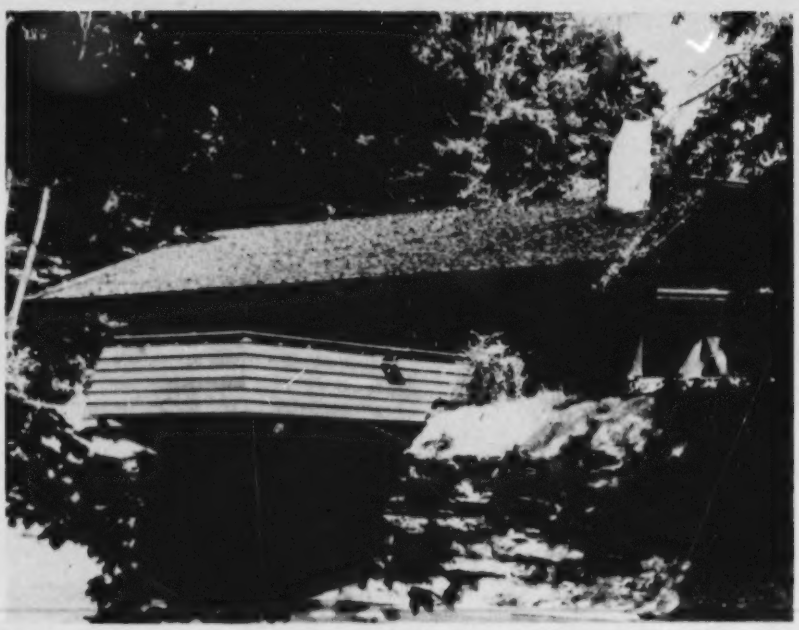
Staff offices and work areas, although well situated, are somewhat smaller than we would desire. Cabinet storage space is quite adequate, but the overhead storage loft seems to get smaller every year. (This, evidently, is a universal problem at all such institutions.)

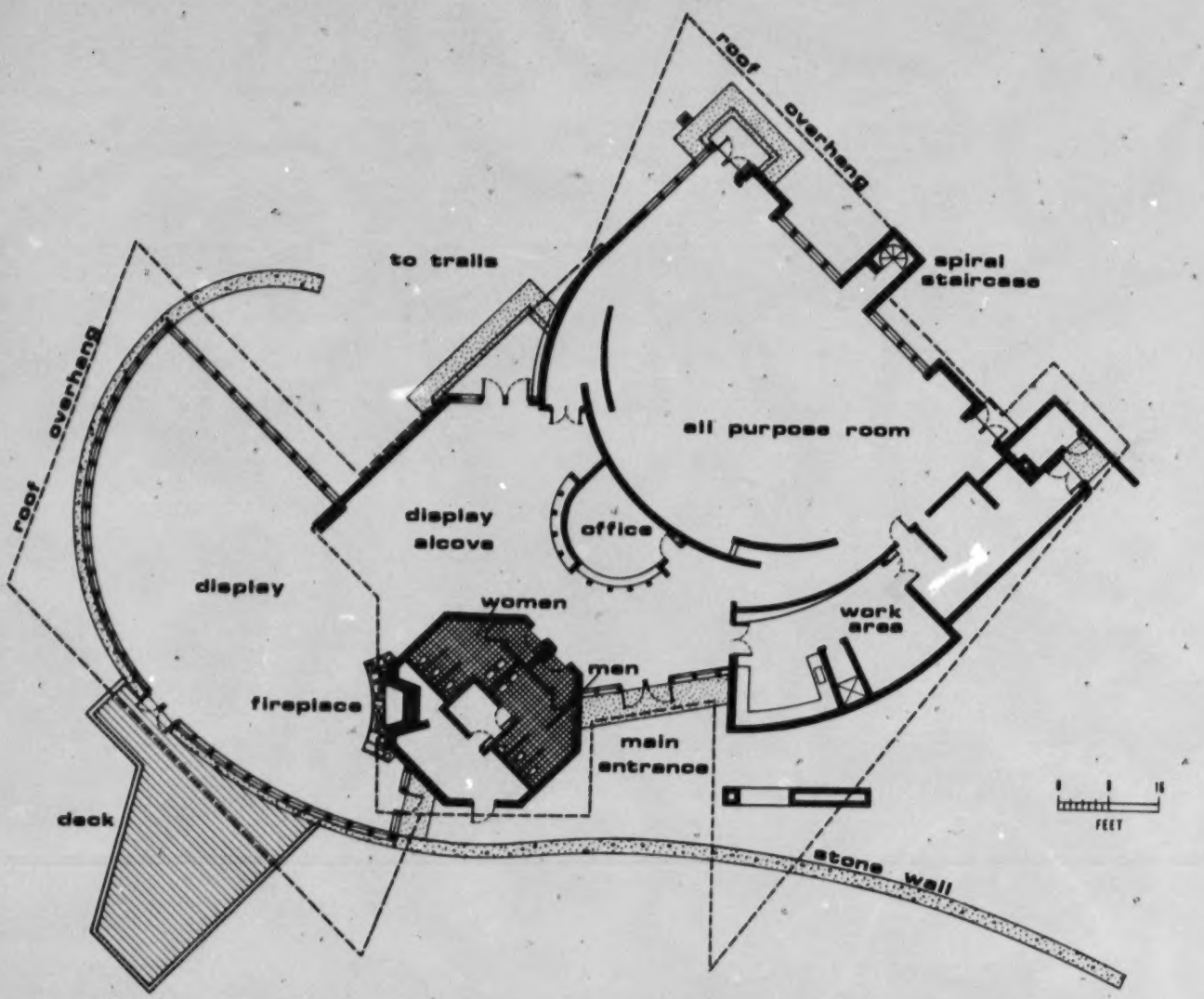
One of the best features of the center is the all-purpose room. ("Auditorium" would not be an adequate name.) The seating is portable, and the room is easily converted for various uses, such as sit-down programs, dinners, workshops, and stand-up affairs. The room will hold up to 200 people comfortably. The flexibility of this room is a joy to work with.

The restrooms are well appointed, but their lighting is rather dim, and we have found there are not nearly enough facilities for periods of peak use.

A price is paid for the pleasant, spacious feeling of the center: A great deal of heat is lost through its large window surfaces. They and the high ceilings make the building an inefficient structure to heat. Two furnaces are required to heat the entire building. Fortunately, the all-purpose room can be isolated, and the rest of the rooms heated using only one furnace.






roof overhang
to trails
spiral staircase
all purpose room
roof overhang
display alcove
office
display
women
work area
men
fireplace
main entrance
deck
stone wall
0 8 16
FEET

Cincinnati Nature Center

Background Information

Address: 4949 Tealtown Road, Milford, Ohio 45150

Sponsoring agency: Cincinnati Nature Center Association

Acreage of nature center: 755

Number of staff: permament and part-time: 11; volunteer: 60

Annual visitation: 32,000

Date interpretive building opened: May 5, 1971

Usable square footage in building: 6,600

Construction cost: (not provided)

Architect: Harry Hake and Partners, Architects and Planners, 2400 Gilbert Avenue, Cincinnati, Ohio 45206

Narrative

The Fanny S. and Casper H. Rowe Interpretive Building has proved to be a very worthwhile attraction at the Cincinnati Nature Center. It was designed primarily to accommodate programs for nature center members, local school groups, and the general public and has served these functions well.

The strategic siting of the building permits ready access to the center's varied interpretive features. Traffic flow to and through the building and over the grounds is smooth, thereby permitting a number of groups to use the facility simultaneously.

No principal building design problems have been encountered, a fact probably attributable to planning efforts of the nature center staff working in close cooperation with the architect.

A lack of adequate storage space was alleviated and additional exhibit space provided for when the Herbert F. Koch wing was added in 1974. (This modification is not shown in the floor plans.)

NOTE: There now is a farm division of the Cincinnati Nature Center. The Long Branch Farm was a gift of Neil and Camilla McElroy. It is located ten miles from the nature center, near Goshen, Ohio, and functions in the same manner as the nature center except that the emphasis is on teaching agricultural ecology.

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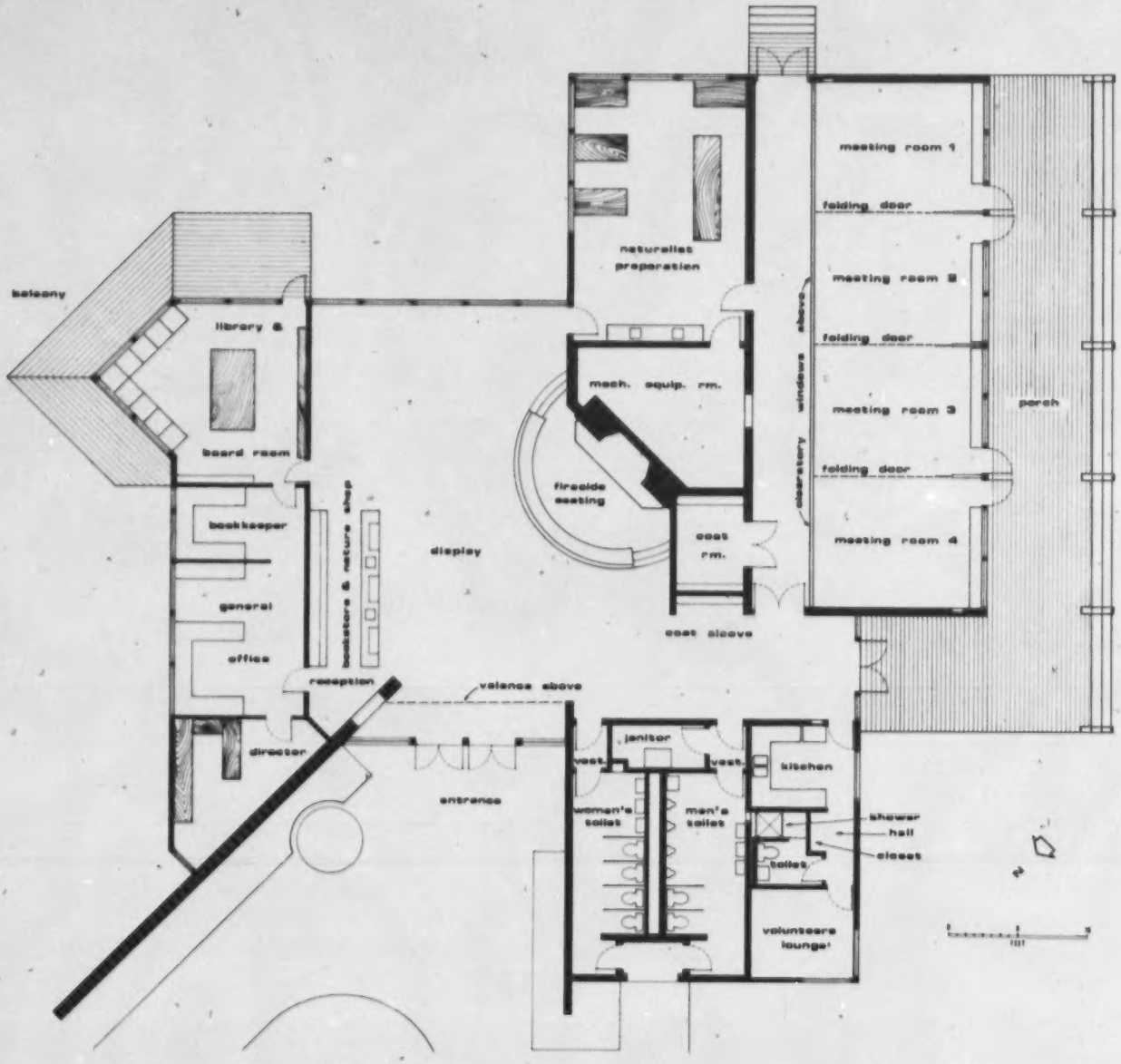
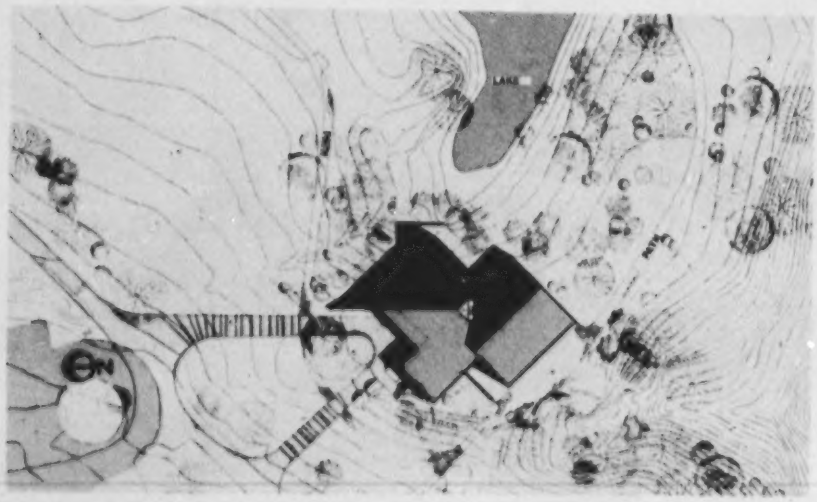

meeting room 1
folding door
meeting room 2
folding door
meeting room 3
folding door
meeting room 4
porch
clerestory windows above
naturalist preparation
mech. equip. rm.
fireside seating
coat rm.
coat alcove
balcony
library &
board room
bookkeeper
general
office
reception
bookstore & nature shop
display
director
valance above
entrance
janitor
vest.
vest.
kitchen
women's toilet
men's toilet
shower
hall
closet
toilet
volunteers lounge


LAKE

Aullwood Audubon Center

Background Information

Address: 1000 Aullwood Road, Dayton, Ohio 45414

Sponsoring agency: National Audubon Society

Acreage of nature center: 70

Number of staff: permanent: 6; part-time: 0; volunteer: 25

Annual visitation: 25,000

Date interpretive building opened: November 1957

Usable square footage in building: 7,450

Construction cost: $100,000

Architect: H. C. Harlan (deceased), Ritenour Road, New Madison, Ohio 45346

Narrative

The interpretive building at the Aullwood Audubon Center is ideally situated—within a few minutes' walk of a small, spring-fed stream, a meadow, marsh, old and second-growth hardwood forests, pine woods, a swamp, pond, restored tallgrass prairie, and river. The diversity and accessibility of these natural features has had a direct influence on the wide variety of programs conducted at the center.

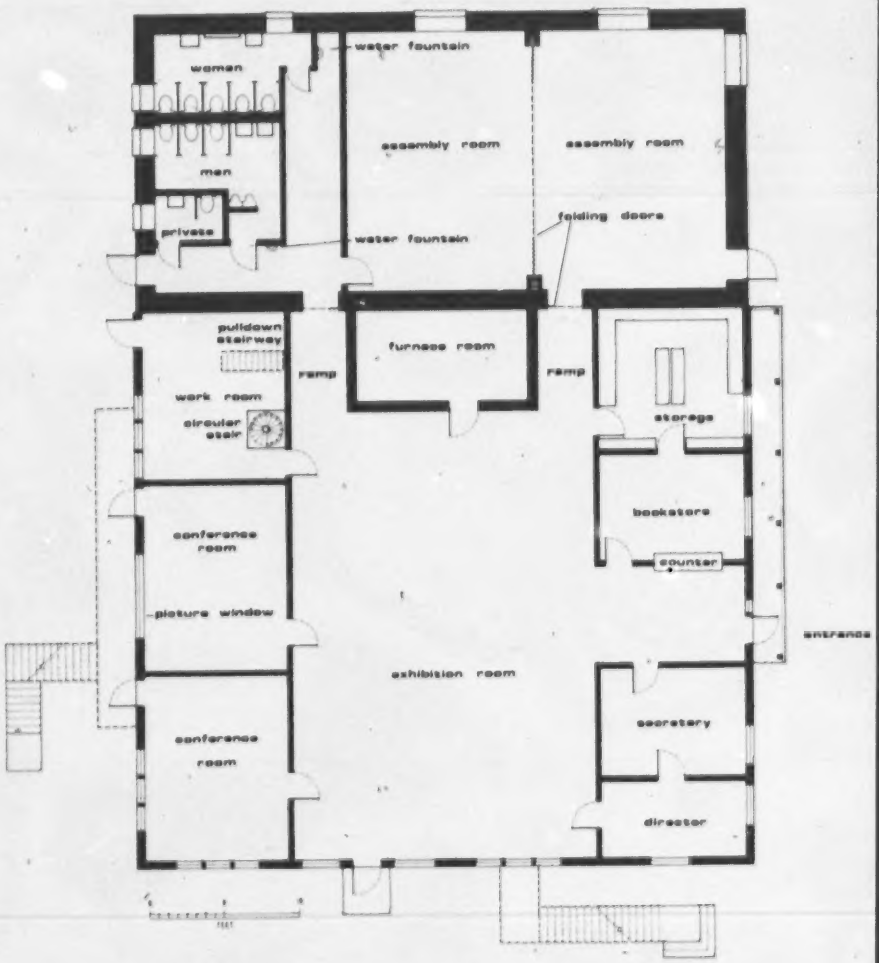
The building was designed and constructed around the framework of an old, existing barn. The interior provides ample usable space for an exhibit area, two classrooms, a workshop, two offices, a bookstore, a 75 to 100 seat auditorium, utility rooms, and restrooms on the main floor, and two large classrooms, ample storage, and additional staff offices upstairs. Over the years the interior has been remodeled in response to changes and expansion in the programs and attendant staff requirements.

The design and spaciousness of the building make it possible to conduct several programs simultaneously. On any given day, there might be a week-long extended class utilizing the auditorium, a garden club meeting in one of the main-floor classrooms, and a 1½-hour school class exploring the exhibit area in company with casual visitors. At the same time additional program activities might be taking place in the remaining main-floor classrooms and in the loft.

Additional design features worth noting:

- The bookstore is located just inside the main entrance of the interpretive building. With larger groups, there is congestion in this rather narrow passageway. And the bookstore is a distraction in this spot: scheduled groups having only a limited amount of time to spend at the center are attracted to it as soon as they walk in the door. Hence, it becomes difficult to fulfill the program objectives in the time allotted.
- Steel casement windows installed throughout the main floor have caused many problems. They conduct heat away from the building, condense moisture during the winter, are difficult to clean, and prohibit installation of storm windows.
- The large auditorium was modified to increase its usefulness by installing a folding wall partition, which is used to divide the room in half. One side, used as the library, was carpeted; the other side was left uncarpeted to accommodate messy children's activities.

From the building's inception and throughout each remodeling stage, the staff have been involved with the architects in developing design ideas. The result of these cooperative efforts is an informal but highly functional building.



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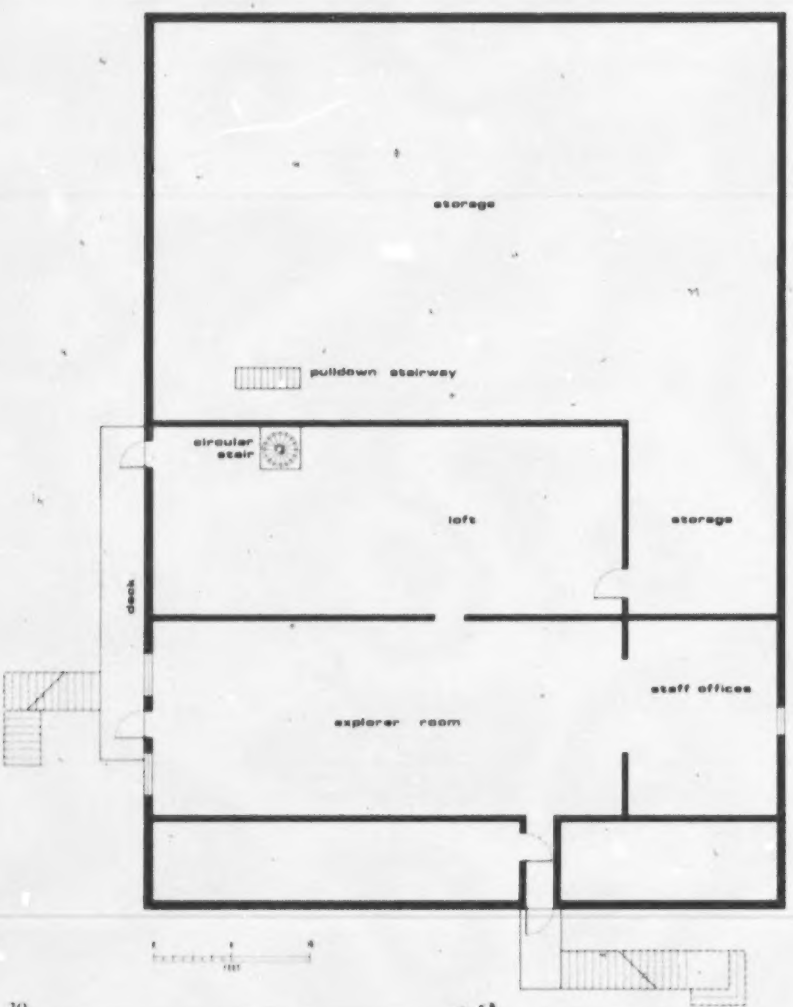
AULLWOOD AUDUBON CENTER


storage
pulldown stairway
circular stair
loft
storage
deck
staff offices
explorer room

AULLWOOD AUDUBON CENTER

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60

Lowry Nature Center

Background Information

Address: Route 1, Box 690, Excelsior, Minnesota 55331

Sponsoring agency: Interpretive building constructed with private funds; operational costs met by Hennepin County Park Reserve District

Acreage of nature center: 400 within 3,800-acre Carver Park Reserve

Number of staff: permanent: 9; part-time: 3; volunteer: 2-4

Annual visitation: 60,000

Date interpretive building opened: February 1969

Usable square footage in building: 10,000

Construction cost: $250,000

Architect: Vosejpka Associates, Inc., 1415 East Wayzata Boulevard, Wayzata, Minnesota 55391

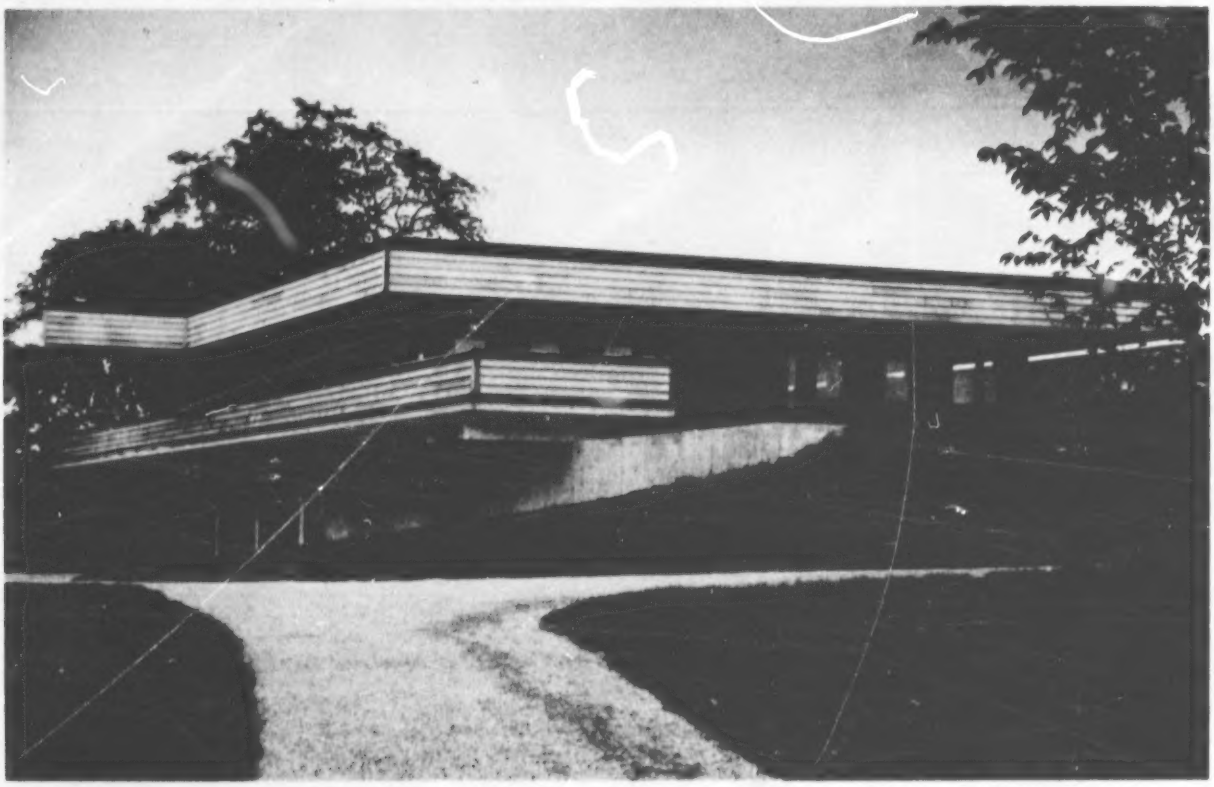
Narrative

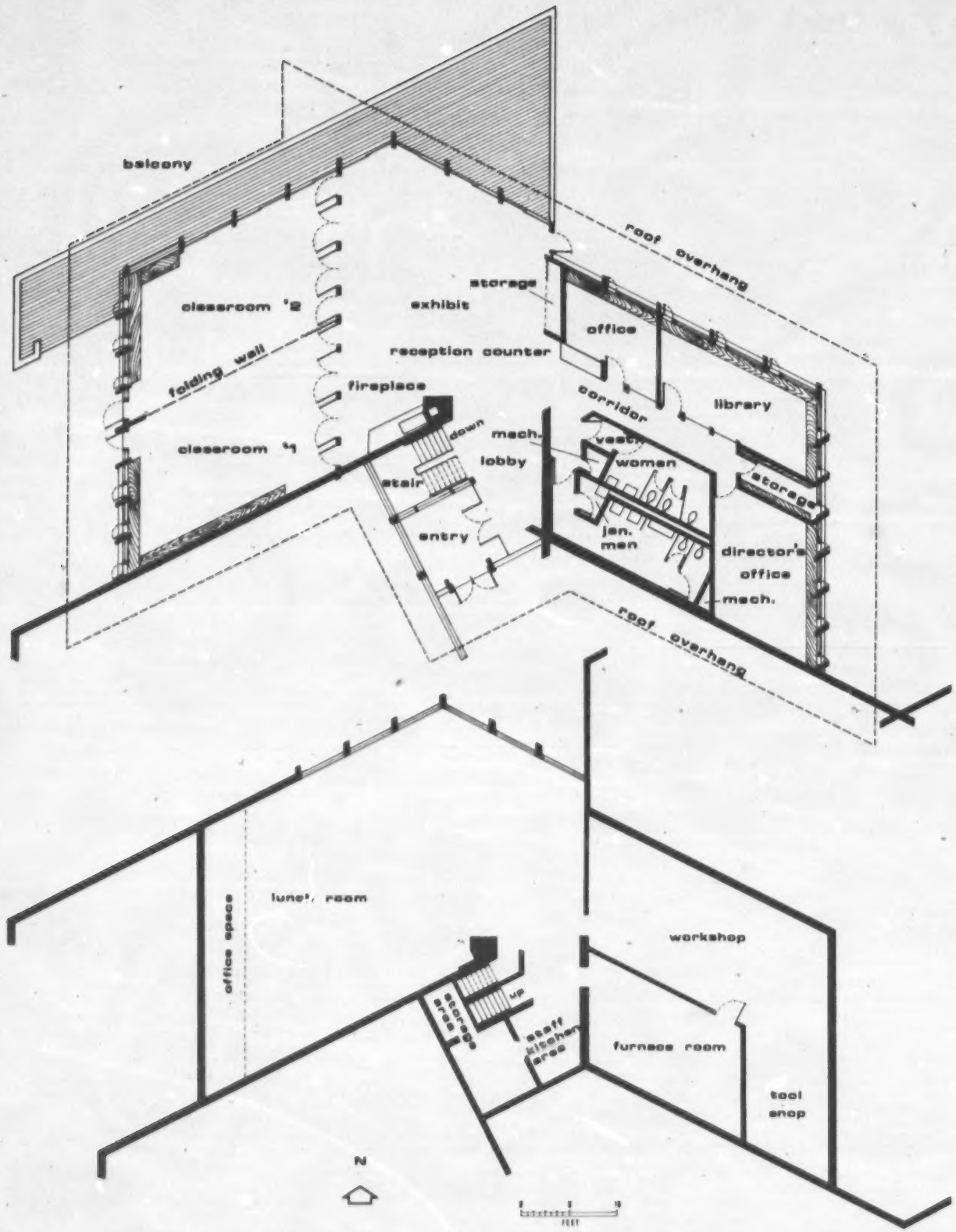
The Lowry Nature Center's interpretive building is an attractive structure of modern design which, because of its low profile, blends well with the surrounding landscape. It is situated in an outstanding natural setting for interpretive programming. The location, however, is more than 25 miles away from the majority of people it was designed to serve. There are no mass transit connections, making the center dependent on automobiles and charter buses to bring visitors.

The interpretive building can be considered a prototype facility, and many lessons have been learned in designing subsequent buildings for the Hennepin County Park Reserve District.

Overall, the building has been quite functional. Because of the placement of such features as the reception area, exhibit spaces, classrooms, restrooms, and library, traffic flows smoothly. Nevertheless, a number of problems have arisen:

- The protruding logs on the exterior ends of the structure, although attractive, have proved to be potentially dangerous because children climb on them.
- The balcony railings are too high for small children or people in wheelchairs to see over.
- While the exterior balcony is serving as a viewing area and an extra classroom, the constant traffic is distracting for people inside.
- The restrooms need to be redesigned, with access provided from the outside to permit their use when the building is closed.
- The large furnace has proved inadequate. It appears that several small furnaces, each heating a specific zone, would have been a better choice.
- The lighting fixtures were poorly designed. They exhibit constant heat buildup and failure.
- Finally, because of the high clay content of the soil around the building and the compaction of the soil during construction, there have been landscaping problems while trying to establish trees, shrubs, and grasses.




balcony
roof overhang
storage
exhibit
office
classroom #2
reception counter
folding wall
fireplace
corridor
library
classroom #1
down
mech.
vestib.
lobby
women
stair
storage
entry
jan.
men
director's
office
mech.
roof overhang
lunch room
office space
workshop
storage area
up
staff kitchen area
furnace room
tool shop
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FEET

Connecticut Audubon Center

Background Information

Address: 2325 Burr Street, Fairfield, Connecticut 06430

Sponsoring agency: Private membership

Acreage of nature center: 152

Number of staff: permanent: 6; part-time: 3; volunteer: 350

Annual visitation: 75,000

Date interpretive building opened: May 1971

Usable square footage in building: 10,000

Construction cost: $291,000

Architect: Muller and Snyder, 155 East State Street, Westport, Connecticut 06880

Narrative

The Connecticut Audubon Center is a pleasant, well-planned facility in which the staff have the opportunity to conduct a wide variety of environmental education programs. It was designed, with the help of the staff, to be a functional activity center as opposed to a museum housing permanent, static exhibits. The exterior design is in keeping with a New England barn style, and it has been one of the most attractive features of the complex.

Most of the interior space is devoted to work and meeting areas. The workshop is used constantly, providing an excellent opportunity for volunteers to assist us with exhibit and sanctuary sign preparation. (The work contributed by these volunteers amounts to free labor and is a great time-saver for the professional staff.) The main room has partitions which permit three large meetings to take place at the same time. Large windows at the ends of corridors, sliding glass windows looking out from the main assembly room toward the sanctuary, and roof-peak windows all give the feeling of being outdoors no matter where you are in the building. This pleasant atmosphere has played an important role in drawing many volunteers. Because of the exposure of the main room, solar energy provides most of the heat for the downstairs area. In four years of operation, we have never turned on the thermostat in the main room.

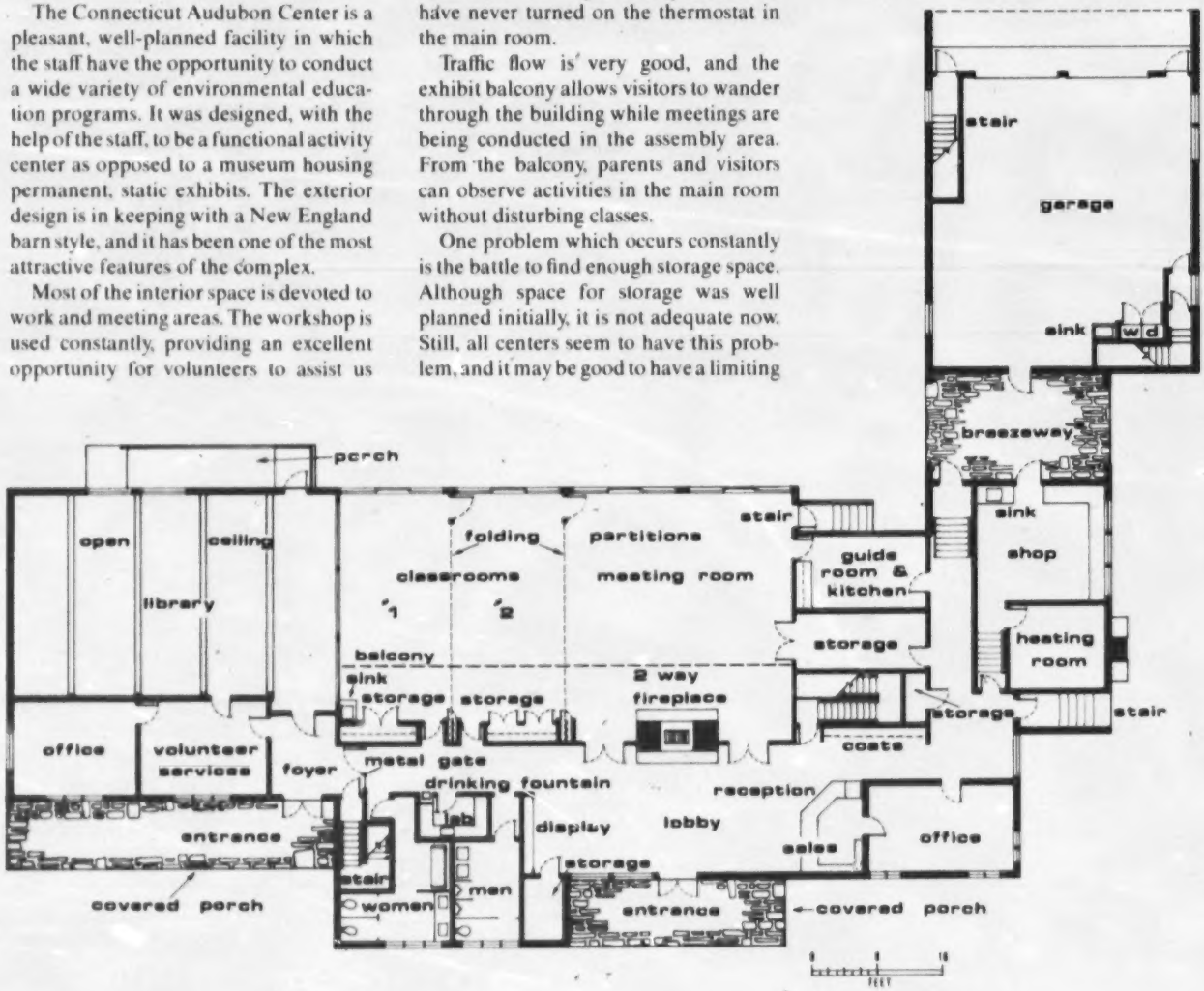
Traffic flow is very good, and the exhibit balcony allows visitors to wander through the building while meetings are being conducted in the assembly area. From the balcony, parents and visitors can observe activities in the main room without disturbing classes.

One problem which occurs constantly is the battle to find enough storage space. Although space for storage was well planned initially, it is not adequate now. Still, all centers seem to have this problem, and it may be good to have a limiting factor on what can be accumulated.

A sales area was opened with a modest inventory in the first year of operation. Now the net annual proceeds can support one full-time staff member. Natural history books, birdseed, prints, and binoculars form the basis of our sales.

A building addition was completed in July, 1974, housing office space, a volunteer services room, a large meeting room, and a 3,000-volume, noncirculating library. The library is an excellent resource for local university and high school students as well as our membership.

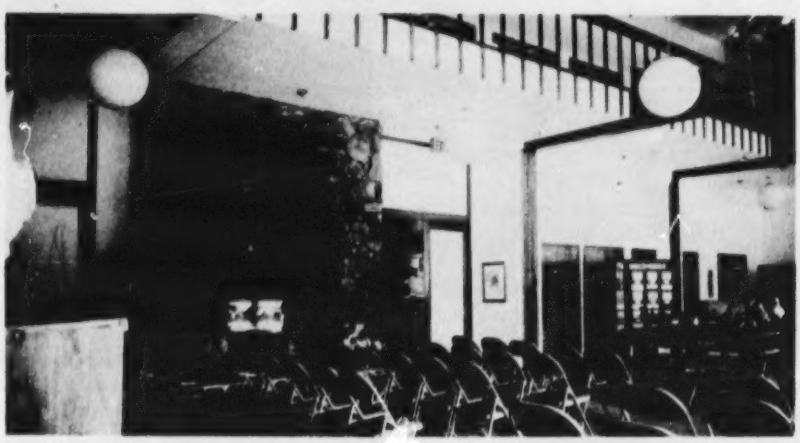
The area immediately around the building has been landscaped with natural plantings by the staff and includes a

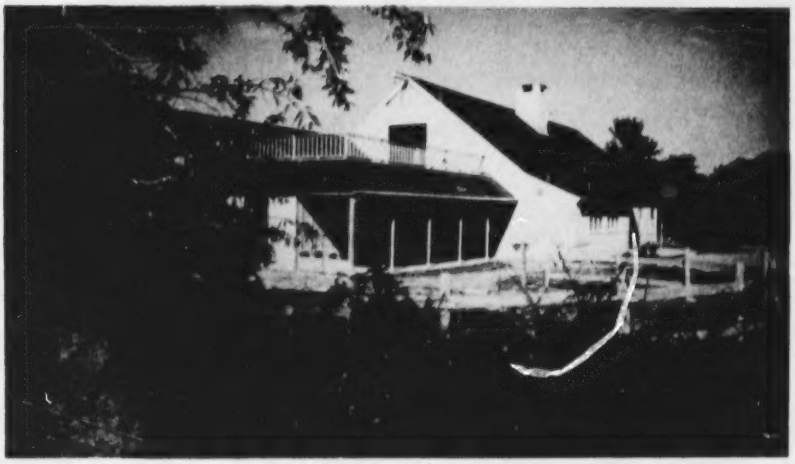


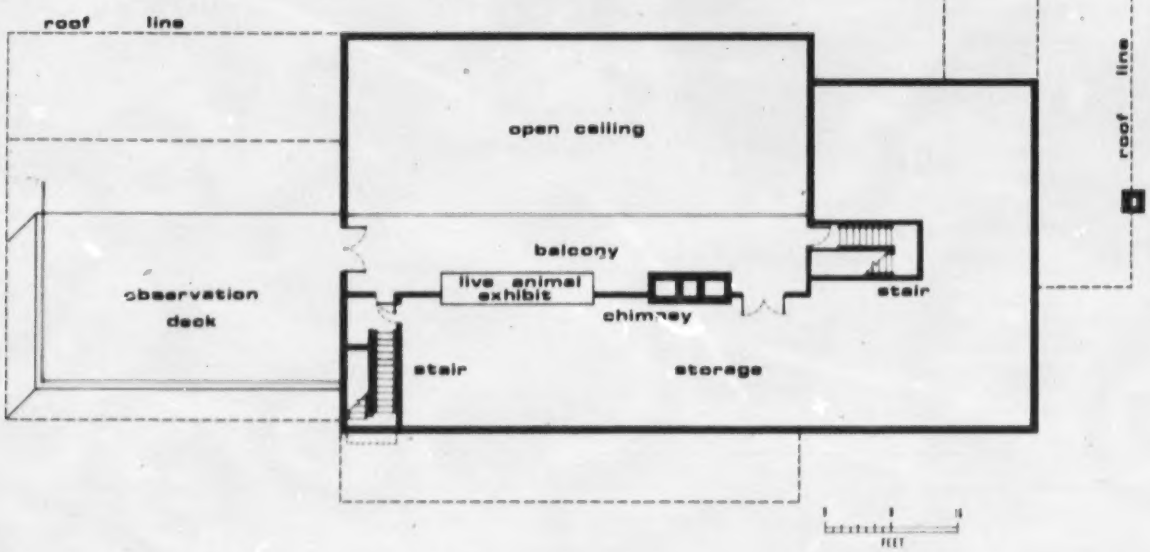
bog garden, organic garden, fern garden, and wildflower plantings along the many stone walls. A small observation pond recently was incorporated into the landscape plan, and it has worked very well with visiting school groups.

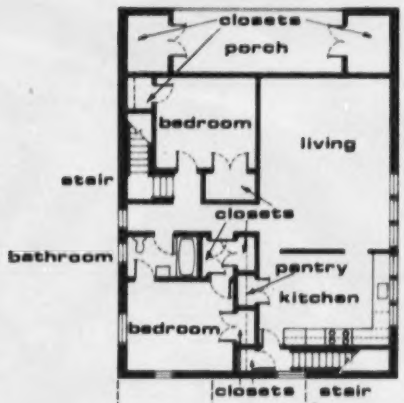
Changing displays inside the building encourage visitors to walk the trails and spend most of their time outdoors. The Roy and Margot Larsen Wildlife Sanctuary is an integral part of the building-sanctuary complex.

In summary, the Connecticut Audubon Center is a delightful place to visit and return to often, sharing the excitement of changing exhibits and programs.









Schlitz Audubon Center

Background Information

Address: 1111 East Brown Deer Road, Milwaukee, Wisconsin 53217

Sponsoring agency: National Audubon Society

Acreage of nature center: 186

Number of staff: permanent: 5; part-time: 0; volunteer: 100

Annual visitation: 50,000

Date interpretive building opened: June 1974

Usable square footage in building: 13,000

Construction cost: $368,000

Architect: Fitzhugh Scott, 733 North Van Buren Road, Milwaukee, Wisconsin 53202

Narrative

The interpretive building of the Schlitz Audubon Center is the newest and largest interpretive building operated by the National Audubon Society. It is the culmination of the planning experiences of the society's Educational Services Department and Nature Center Planning Division, both of which worked in close cooperation with the architect. In 1975, the architect's office received Wisconsin's highest honor award from the American Institute of Architects for the design of the building.

A low profile was chosen so the building would not compete with its natural background, a wooded setting. The unique shape of the structure was determined largely by the topography of the site. The exterior façade was wrapped with narrow, horizontal cedar siding to give a sense of simplicity and continuity to the building's irregular form.

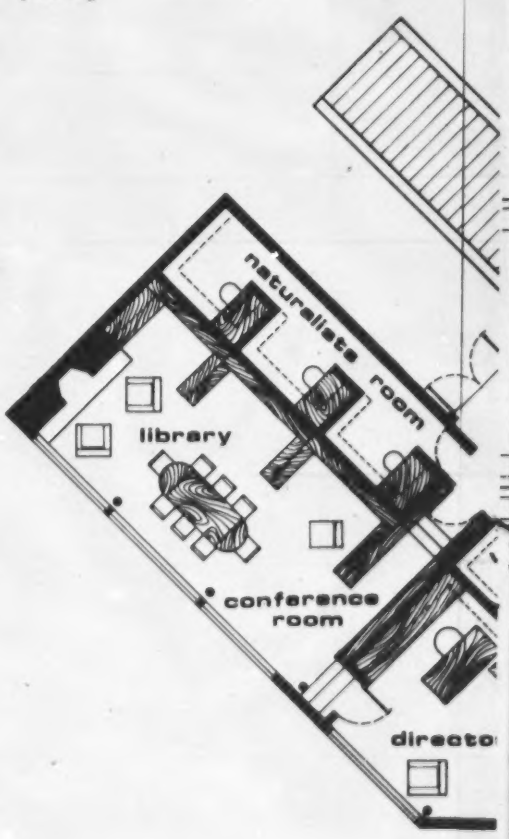
The programmed activities of the center were the focus of attention in determining the building site and visitor-traffic relationships. A concept was developed whereby the exhibition functions of the building were superimposed on the main trail system, which in effect made part of the building a covered portion of the trail. Since most visitors come first to the building for orientation and return later for additional information, the building became an integral link in outward- and inward-bound trail circulation. All other activity units in the building were connected to the "covered trail-exhibit area."

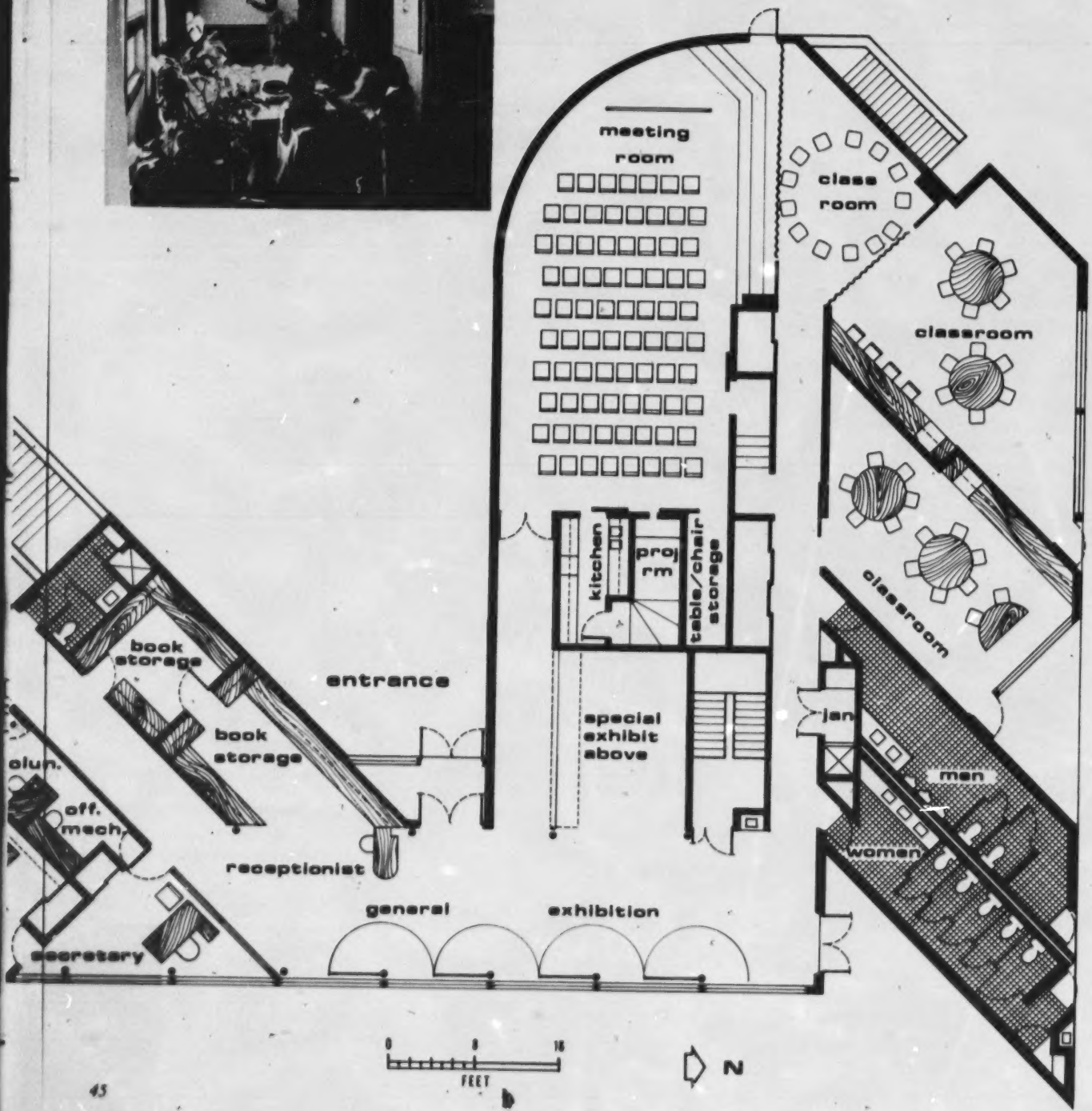
Staff offices were located in a more private section of the building, along with the library. The classrooms, meeting room, bookstore, and restrooms became the public sector of the facility. They were confined to the ground floor, and the workshop, darkroom, heating and cooling units, and storage areas were relegated to the basement.

Additional design features which were given particular attention:

- Ample means of ingress and egress were provided throughout the building to minimize problems with traffic flow.
- Skylights and large windows were installed to take advantage of natural light, while fluorescent and overhead track lighting were used to augment the natural light when necessary.
- Storage space was provided adjacent to the bookstore.
- Ramps were used in lieu of stairs to accommodate the aged and handicapped.
- Water closets in both men's and women's restrooms were sized for wheelchair access.
- There is outside access to the restrooms, which can be left unlocked for after-hour visitors.
- The structural and mechanical systems were left exposed so the building could be used as part of the lesson plan. The architect attempted to demonstrate that wood is not as practical as steel posts and beams in some places.

The staff feel that the building is functionally operative and esthetically pleasing.




meeting room
class room
classroom
classroom
kitchen
proj rm
table/chair storage
special exhibit above
entrance
book storage
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Schuylkill Valley Nature Center

Background Information

Address: 8480 Hagy's Mill Road, Philadelphia, Pennsylvania 19128

Sponsoring agency: Schuylkill Valley Nature Center, Inc. (private, nonprofit corporation)

Acreage of nature center: 550

Number of staff: permanent: 16; part-time: 8; volunteer: 60

Annual visitation: 65,000

Date interpretive building opened: October 1968

Usable square footage in building: 16,336

Construction cost: $372,000

Architect: Montgomery, Bishop & Arnold, 137 North 17 Street, Philadelphia, Pennsylvania 19103

Narrative

The staff of the Schuylkill Valley Nature Center believe that the overall design of the interpretive building is highly satisfactory for environmental education. The specific features indicated as the most outstanding include the following:

All the rooms have great flexibility, especially the auditorium, classrooms, and discovery room, which can be rearranged and used in many different ways depending upon the size and purpose of visiting groups.

All sections of the building have their own external exits and entrances. This arrangement allows a teacher to move freely from a classroom setting to the out-of-doors without passing through other sections of the building.

The building's public areas are completely accessible to people with physical handicaps. There are large restrooms designed for the physically handicapped which more than meet their needs as well as the needs of nonhandicapped visitors.

The building has carpeting in many public areas. This significantly cuts down on noise, enables groups to sit on the floor, and adds greatly to the friendliness of the areas.

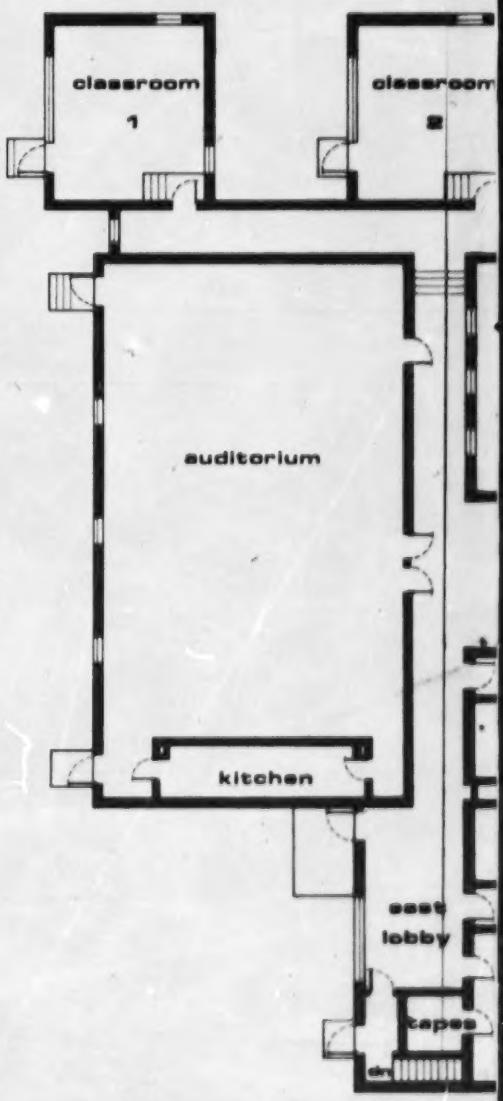
There are a large number of electrical outlets located conveniently throughout the building. They are of five different types, including service for 220-volt strip molding and 110-volt strip molding, 110-volt outlets in couplets, and covered outlets on all floor surfaces.

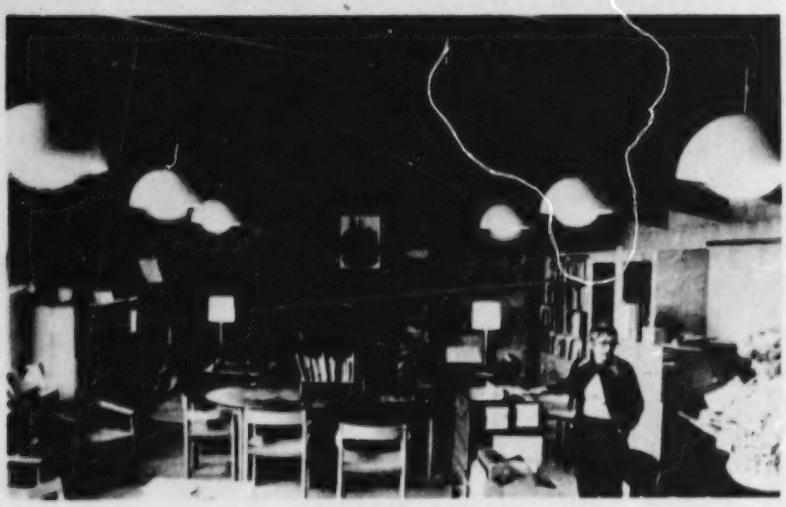
The staff areas have separate rooms for quiet, careful work. Rooms have been established specifically for graphic arts, for collections, and as a photographic darkroom. In all three, people can work undisturbed and be assured that their projects will remain untouched. In addition to the quiet work areas, there is a large-scale construction room known as the naturalists' workroom.

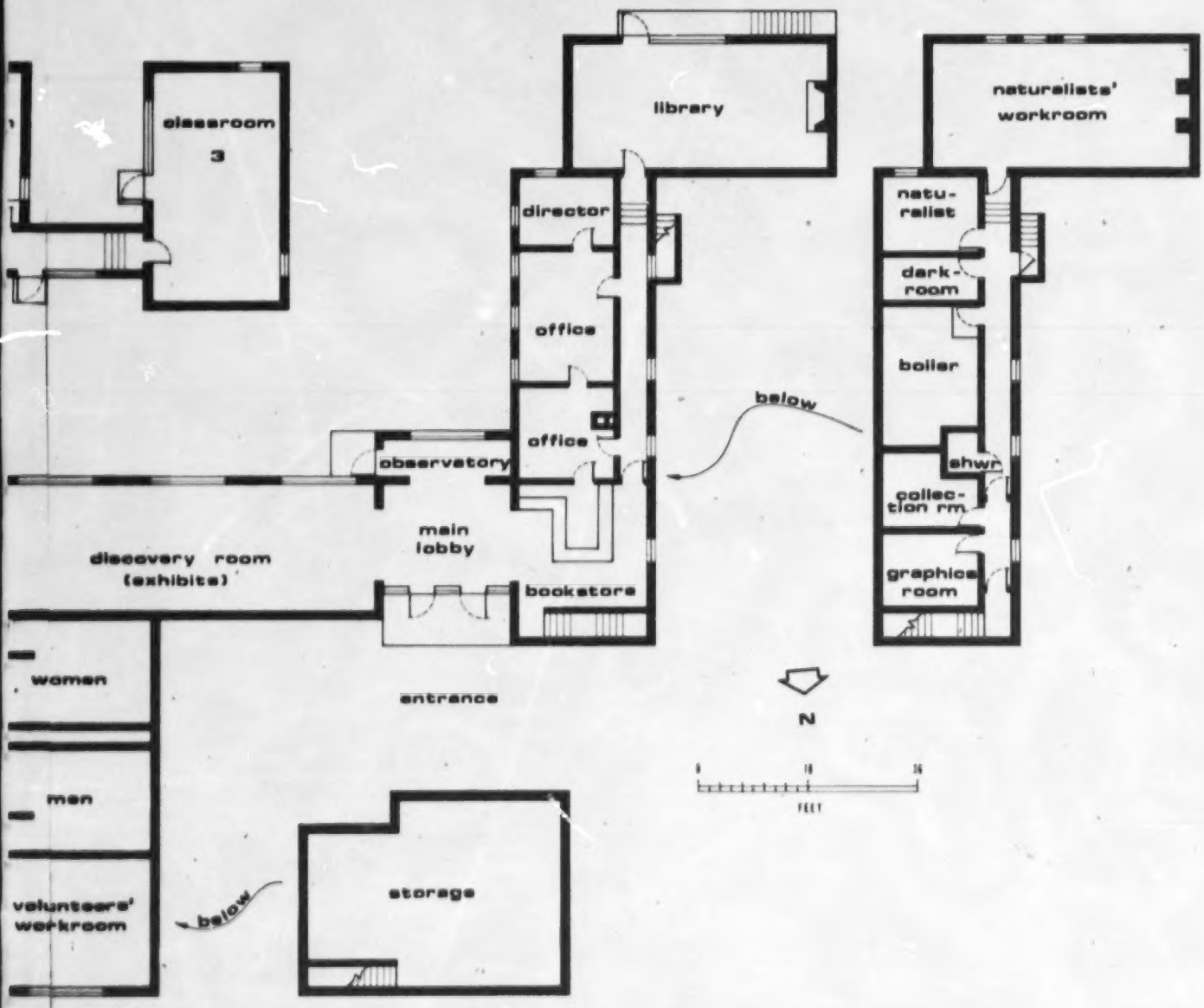
The spacious library is fully carpeted and has a fireplace and a private study area. It is located out of the main traffic pattern and is large enough to accommodate meetings of up to fifty persons.

The interpretive building blends tastefully with the landscape, even though it is very large in comparison with similar nature center structures elsewhere.

The current staff had little to do with the design and location of the building, but the teaching staff employed by the nature center at the time the building was designed were partly responsible for selecting the site, and they were given an active hand in designing all areas of the building.






classroom
3
library
naturalists'
workroom
director
office
office
observatory
main
lobby
discovery room
(exhibits)
bookstore
below
natu-
ralist
dark-
room
boiler
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room
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men
volunteers'
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entrance
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Bays Mountain Park
Nature Interpretive Center

Background Information

Address: Route 4, Kingsport, Tennessee 37660

Sponsoring agency: Cooperative sponsorship by Sullivan County and City of Kingsport

Acreage of nature center: 1,400

Number of staff: permanent: 18; part-time: 2; volunteer: 100

Annual visitation: 150,000

Date interpretive building opened: May 1971

Usable square footage in building: 17,000

Construction cost: $250,000

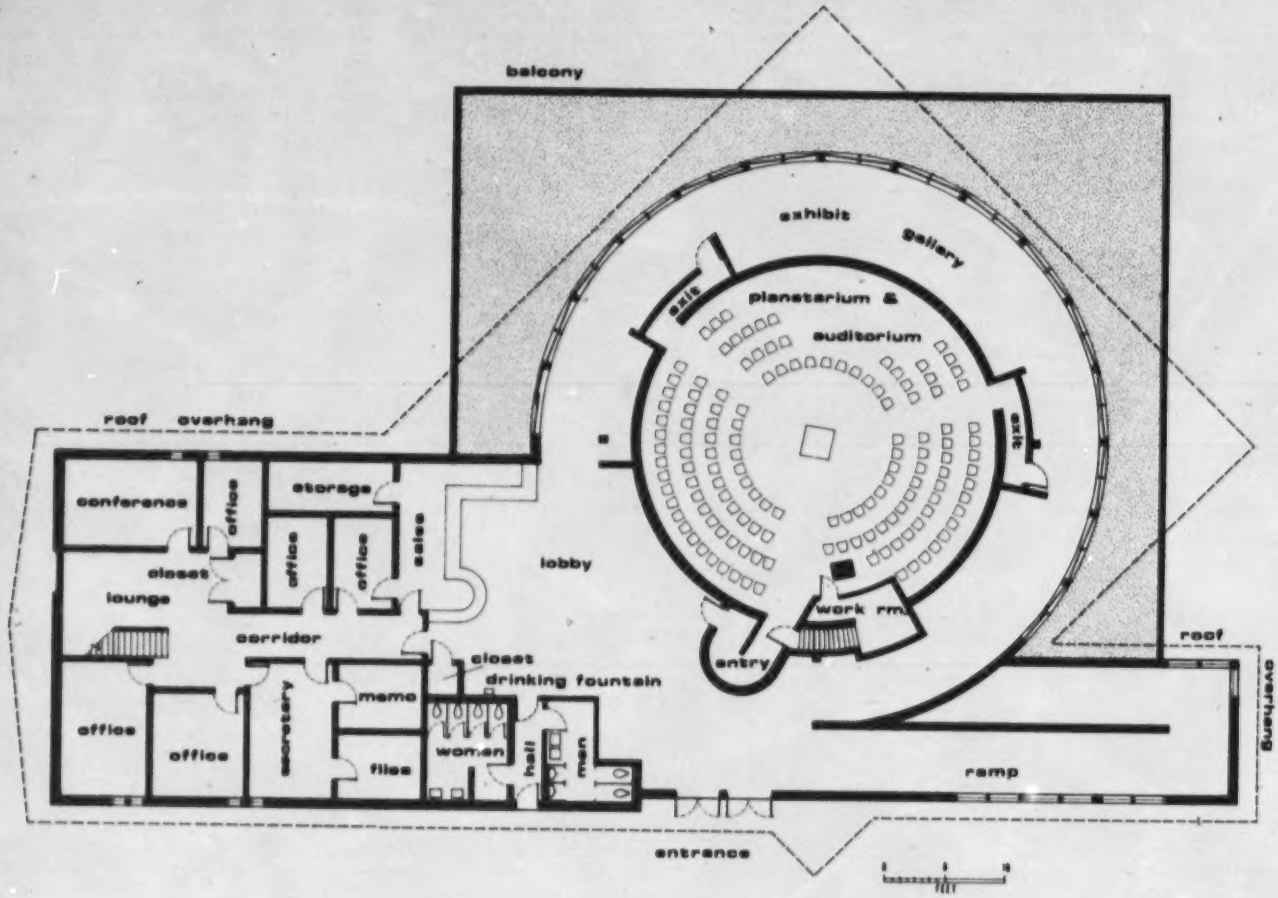
Architect: William Hamilton Wallace, Eastman Road, Kingsport, Tennessee 37660

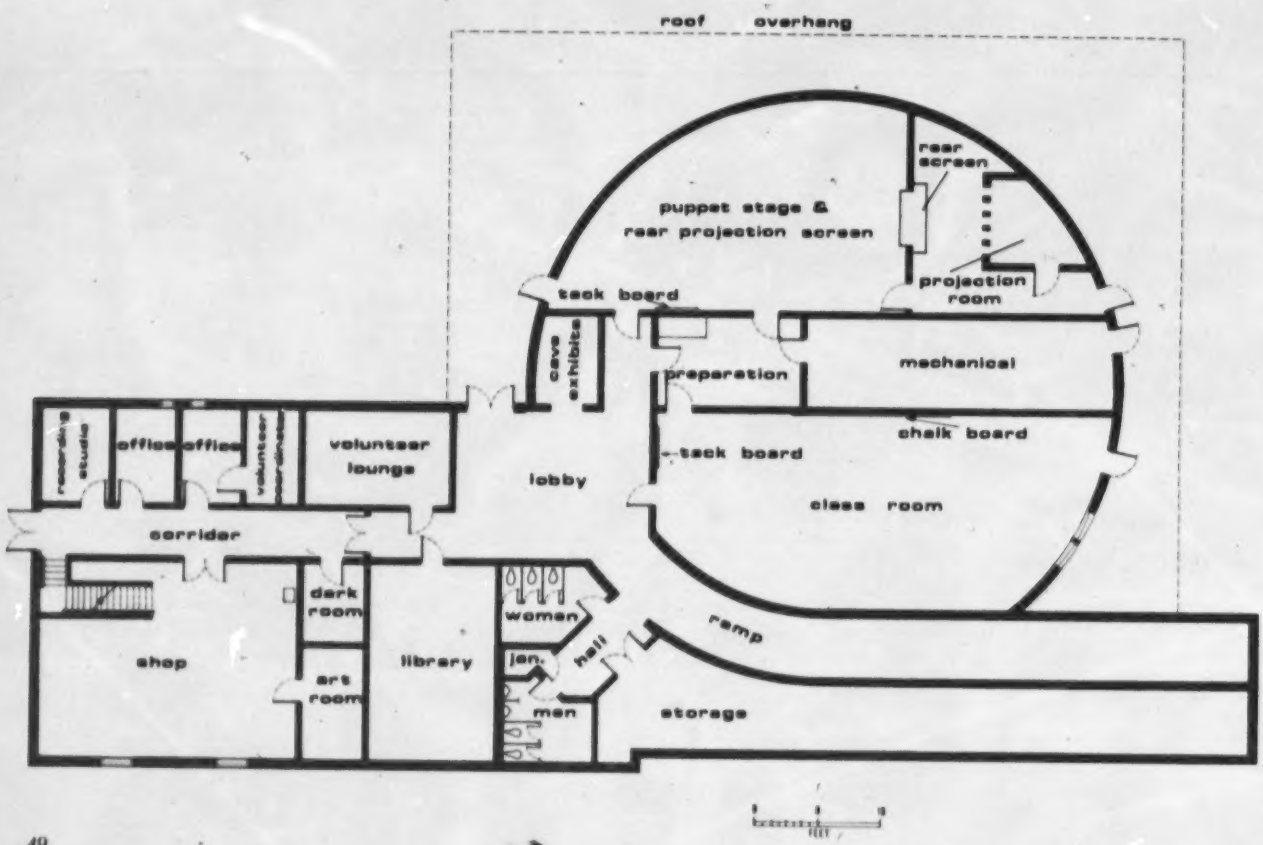
Narrative

The Bays Mountain Park Nature Interpretive Center is located in a 1,400-acre mountaintop natural area which is easily accessible to the highly industrialized community located below. The interpretive building provides an informative gateway by virtue of its placement near the park entrance. Natural materials such as native stone quarried within the park and 100-year-old timbers from local barns were blended with concrete and glass to form an esthetically pleasing and functional facility. The building's high cathedral ceilings and graceful curves establish a restful atmosphere which belies its utilitarian purposes.

Visitor traffic into the planetarium, around the exhibit galleries on both levels, and out into the park moves exceptionally well. Ramps have been installed in lieu of stairways to provide access for the handicapped to all parts of the building.

The Bays Mountain Park staff are well satisfied with the interpretive building's design. It was the result of input from many nature centers and professionals in the field, including the National Audubon Society's Nature Center Planning Division.


balcony
exhibit gallery
exit
planetarium & auditorium
exit
roof overhang
conference
office
storage
aisle
office
office
closet
lounge
lobby
corrider
work rm
entry
closet
drinking fountain
roof overhang
office
office
secretary
memo
files
women
hall
men
ramp
entrance


roof overhang
rear screen
puppet stage & rear projection screen
projection room
tack board
cave exhibits
preparation
mechanical
chalk board
tack board
recording studio
office
office
volunteer coordinator
volunteer lounge
lobby
class room
corrider
dark room
women
ramp
shop
art room
library
jan.
hall
men
storage

Somerset County Environmental Education Center

Background Information

Address: P.O. Box 837, Somerville, New Jersey 08876

Sponsoring agency: Somerset County Park Commission

Acreage of nature center: 400 plus 340 acres in satellite areas throughout county

Number of staff: permanent: 10; part-time: 11; volunteer: 21

Annual visitation: 100,000

Date interpretive building opened: January 1977

Usable square footage in building: 18,000

Construction cost: $760,000 (building site development, furnishings, parking) plus $458,000 for solar heating and cooling research project

Architect: Halsey and Ryder, 31 South Finley Avenue, Basking Ridge, New Jersey 07920

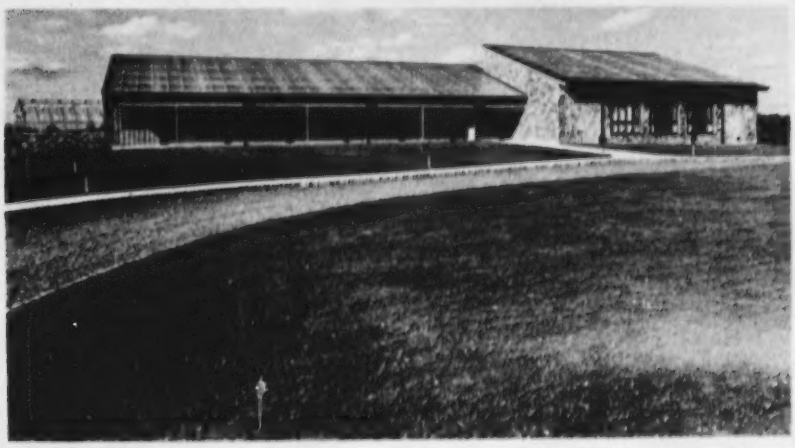
Narrative

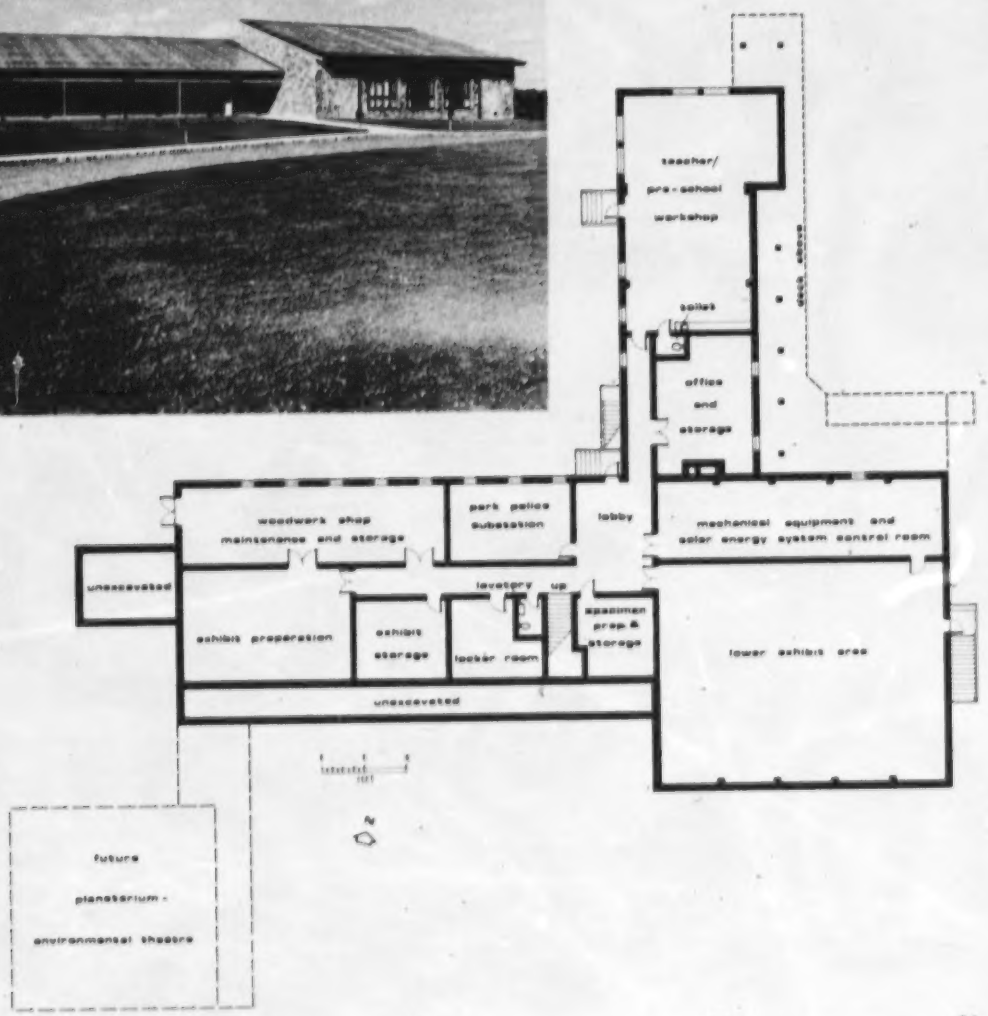
The interpretive and education building of the Somerset County Environmental Education Center will serve as the main program and staff-activity focal point for the environmental sciences department of the Somerset County Park Commission. It is the result of four years of intensive planning by the center staff and architects.

The location was selected as the most accessible and safe site within the center's extensive wetlands. The building's orientation permits excellent viewing of the surrounding pond complex and exposes maximum roof area to the sun, which will operate a complete solar heating and cooling system, architecturally the first of its kind in the nation.

The exterior of the building is faced with rough-sawn cedar boards and fieldstone to harmonize with the natural surroundings. The front view has the appearance of a low, single-story building, but it is in reality two stories, built on a slope. Both stories have grade-level entrances. The unique solar roof is entirely Lexan-paneled in its front-facing (south) section.

Three wings of this structure serve three different functions: staff activities, educational programming, and general





public orientation. All staff and educational areas are screened from access by the general public to prevent visual and aural distractions. Public restrooms are situated adjacent to the upstairs lobby; other restrooms are provided for staff elsewhere in the building.

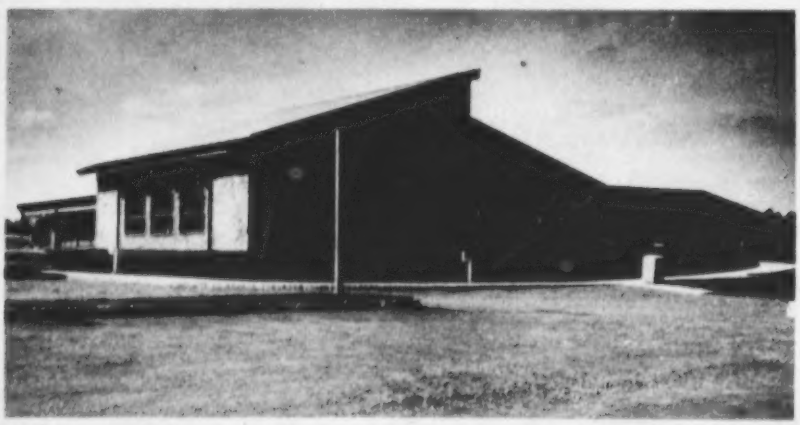
The sales area is part of a reception area in the upper lobby. The 4,000-volume library is located in the educational wing but is readily accessible from the upper lobby. The auditorium is a large, level-floored meeting room capable of accommodating 150 people seated or 110 people seated at tables for a luncheon or workshop.

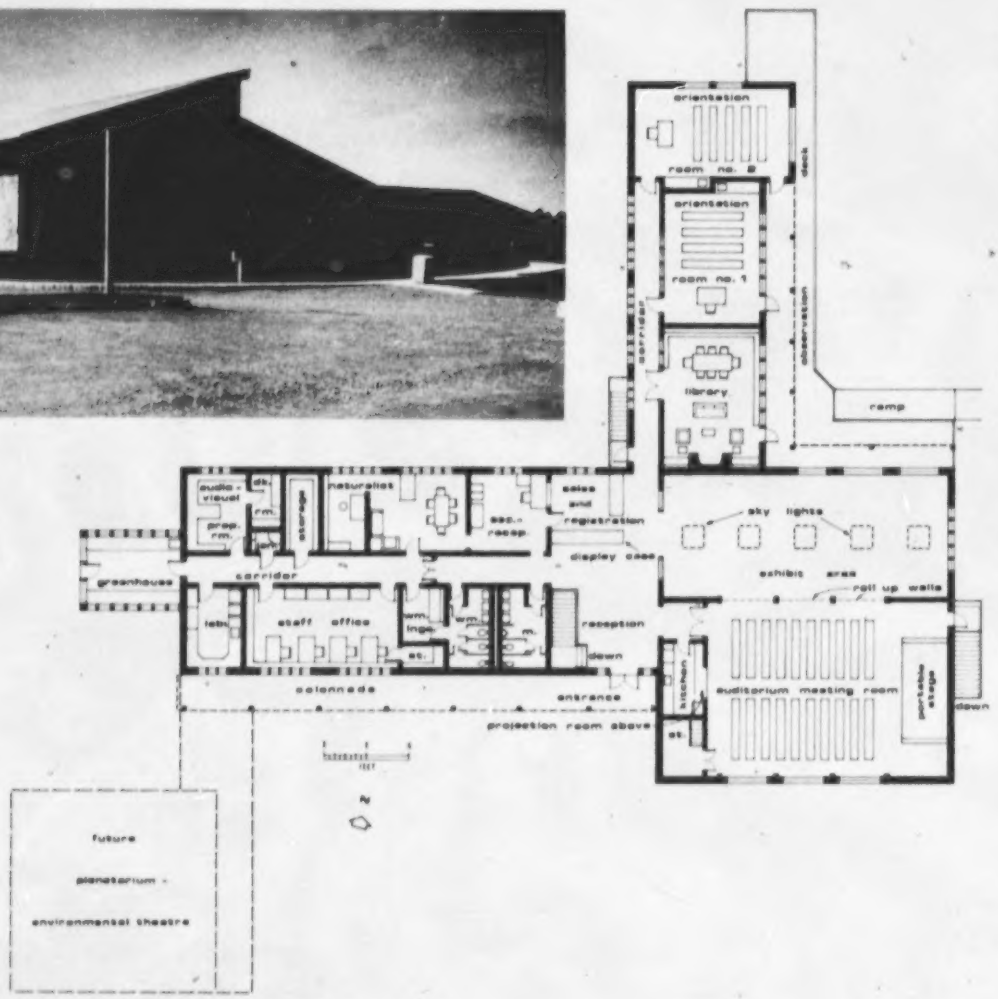
There are three classrooms, including a large one designed for an ongoing preschool children's program. In addition, there are two exhibit areas: one upstairs to serve for general public orientation, interpreting seasonal natural surroundings prior to trail walks; and one downstairs to house major, more permanent (one year or longer) exhibits informing the public about "Man, Energy and Ecology." The upper exhibit area is lighted naturally by large windows and skylights; the lower one uses artificial light exclusively.

Heavy insulation, fluorescent lighting, use of natural lighting in winter and shading in summer—all contribute to the building's conservation of energy.

Provisions have been made to accommodate the handicapped on the upper, most frequently used level. The lower level presents some barriers to handicapped persons, particularly those in wheelchairs, but consideration is being given to solving the problems.

The two major drawbacks of the building relate to size. More storage areas are needed, and it would be good to have larger staff office and library areas. A large janitor's room is needed. The auditorium would be more useful if 250 people could be accommodated. Expansion is possible adjacent to and parallel with the classroom wing, where a mirror image of it could be built. The existing hallways on both floors of the current wing then could be used to provide additional space.





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